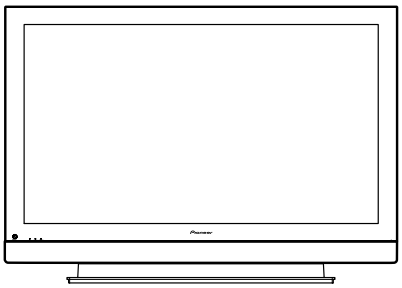
Pioneer sound.vision.soul

Service Manual



PDP-6071PU

ORDER NO.
ARP3394

PLASMA DISPLAY SYSTEM

PDP-6071PU
PDP-6070PU

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-6071PU	KUC	AC 120 V	
PDP-6071PU	KUCXC	AC 120 V	
PDP-6070PU	KUC	AC 120 V	
PDP-6070PU	KUCXC	AC 120 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
PDP-6071PU, PDP-6070PU	ARP3395	SCHEMATIC DIAGRAM, PCB CONNECTION DIAGRAM

For details, refer to "Important Check Points for good servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
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1. NOTES ON SERVICE VISIT

1.1 SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

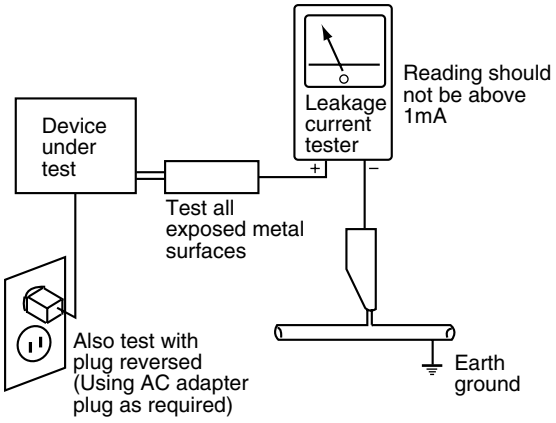
1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.
6. Perform the following precautions against unwanted radiation and rise in internal temperature.
   - Always return the internal wiring to the original styling.
   - Attach parts (Gascket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
7. Perform the following precautions for the PDP panel.
   - When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
   - Make sure that the panel vent does not break. (Check that the cover is attached.)
   - Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
8. Pay attention to the following.
   - Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 4MΩ. The below 4MΩ resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).
Turn the AC power switch on.
Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1mA.


Reading should not be above 1mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.
If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

1. Power cord
2. AC inlet
3. Power switch (S1)
4. Fuse (In the POWER SUPPLY Unit)
5. STB transformer and Converter transformer (In the POWER SUPPLY Unit)
6. Other primary side of the POWER SUPPLY Unit

■ High Voltage Generating Point

The places where voltage is 100 V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.
The VSUS voltage remains for several minutes after the power to the unit is turned off. These places must not be touched until about 10 minutes after the power is turned off, or it is confirmed with a tester that there is no residual VSUS voltage.

If the procedures described in “10.3 POWER ON/OFF FUNC-TION FOR THE LARGE-SIGNAL SYSTEM” are performed before the power is turned off, the voltage will be discharged in about 30 seconds.

POWER SUPPLY Unit.....(205 V)
60 X DRIVE Assy.....(–180 V to 205 V)
60 Y DRIVE Assy.....(500 V)
607 SCAN A Assy.....(500 V)
607 SCAN B Assy.....(500 V)

: Part is Charged Section.
: Part is the High Voltage Generating Points other than the Charged Section.

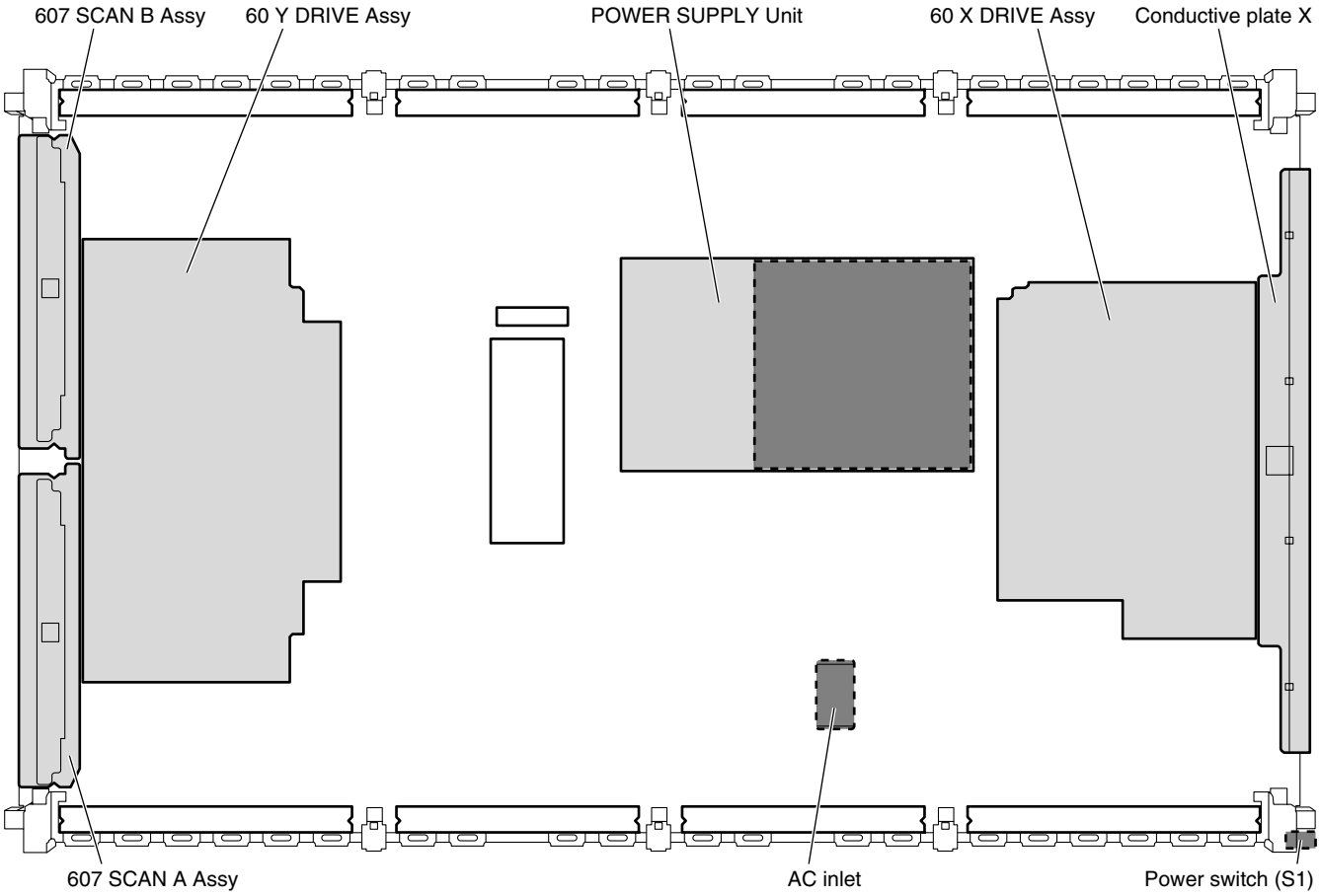


Fig. High Voltage Generating Point (Rear view)

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

Quick Reference upon Service Visit ①
Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① **Rear case**
When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "6. DISASSEMBLY"

② **Attaching screws for the HDMI connector**
When attaching the HDMI connector after replacing the Main Assy, secure the HDMI connector manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① **How to discharge before replacing the Assys**
A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:
A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.
For details, see "10.2 Power ON/OFF Function for the Large-Signal System."

② **On the settings after replacement of the Assys**
Some boards need settings made after replacement of the Assys. For details, see "7. ADJUSTMENT"

3. On various settings

① **SR+**
After a repair using a PC, be sure to restore the setting for the RS-232C connector to SR+.

② **Setting in Factory mode**
After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD/SD

	Item	No. of LEDs flashing: Red	Blue
Panel section	Communication with the panel drive IC		Blue 1
	Communication with the module IIC		Blue 2
	DIGTAL-RST2		Blue 3
	Panel high temperature		Blue 4
Main section	Audio		Blue 5
	Communication with the Module microcomputer		Blue 6
	Main 3-wire serial communication		Blue 7
	Main IIC communication		Blue 8
	Communication with the Main microcomputer		Blue 9
	FAN		Blue 10
	Unit high temperature		Blue 11
	Communication with the D-TUNER		Blue 12
	MTB-RST2/RST4		Blue 13
	POWER	Red 2	
	SCAN	Red 3	
	SCN-5V	Red 4	
	Y-DRIVE	Red 5	
	Y-DCDC	Red 6	
	Y-SUS	Red 7	
	ADRS	Red 8	
	X-DRIVE	Red 9	
	X-DCDC	Red 10	
	X-SUS	Red 11	
	UNKNOWN	Red 15	

Change of settings

How to enter Factory mode using the supplied remote control unit

In the same way as with the remote control unit supplied with the 6th-generation model

How to enter Integrator mode using the supplied remote control unit

① Enter the Standby mode.
② Press [MENU].
③ Press [TV ⏻].

Release TRAP SW-ERR

① Enter the Factory mode.
② Select the INITIALIZE mode.
③ Hold [DISPLAY] pressed for at least 5 seconds.

How to switch UART ① (Integrator)

① Enter the Integrator mode.
② Display "OFF" using [➡].
③ Change the communication speed using [⬇], then [➡].

How to switch UART ② (During Standby)

① Enter the Standby mode.
② Hold [VOL +] or [VOL -] pressed for 3 seconds.
③ Hold [SPLIT] pressed for 3 seconds.
④-1 To set to 232C, press [ENTER].
⑤-2 To set to SR+, press [HOME MENU].

Note: If switching is completed successfully, the red LED will flash twice.
Note 1: Use a remote control unit supplied with the 6th-generation models or later.
Note 2: Do not hold a key pressed for more than 5 seconds.

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[ ] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count
Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [⬇] four times.)

2. Confirmation of the Power-down and Shutdown histories

① **Panel system**
PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] three times.)
SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] four times.)

② **Main Assy**
Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [⬇] three times.)

3. How to display the Mask indication

① **Mask indication in the panel side**
1. Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] 8 times.)
2. Press [ENTER], then select a Mask indication, using [⬆] or [⬇].

② **Mask (SG screen) indication in the Main Assy (MAIN VDEC)**
1. Select either Input 1 or 2 or 4, to which no signal is input (black screen).
2. Select {INITIALIZE} then {SG MODE}. Press [⬅]. (After entering Factory mode, press [MUTING] three times, then press [⬇] once.) Then, the indication at the lower right of the screen changes from "OFF" to "ANA AD YCBCR".
3. You can change Mask patterns by pressing [⬇] to select {SG PATTERN} then using [⬅] or [➡].

Note: When you switch "SG MODE" routes, some displays become monochrome, as they are in Y-signal only mode.

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. Digital Video Assy: Transfer of backup data
① Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, then press [ENTER].)
② Select {TRANSFER}, using [➡], then hold [SET] pressed for at least 5 seconds.
③ After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

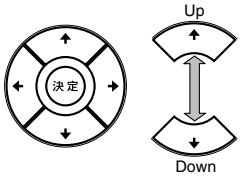
2. MAIN Assy (U): Execution of FINAL SETUP.
① Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER]. (After entering Factory mode, press [MUTING] three times, then press [⬇] four times.)
② Select "YES", using [➡]. Then hold [ENTER] pressed for at least 5 seconds.
③ After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit: Clearance of the accumulated power-on count and maximum temperature value
① Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, press [ENTER], then press [⬇] six times.)
② Press [➡] to select "CLEAR". Hold [SET] pressed for at least 5 seconds.
After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

4. Other Assys: Clearance of the maximum temperature value
① Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, press [ENTER], then press [⬇] seven times.)
② Press [➡] to select "CLEAR". Hold [SET] pressed for at least 5 seconds.
After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②
Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [⬆] or [⬇].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER]. To return to the next nested layer above, also press [ENTER].

INFORMATION mode
1. VERSION (1)
2. VERSION (2), (3)
3. MAIN NG
4. TEMPERATURE
5. HOUR METER
6. HDMI SIGNAL INFO1, 2
7. VDEC SIGNAL INFO 2
8. DTV TUNING STATUS 1, 2, 3
9. DTV TV-GUIDE BER
10. DEBUG INFO

MUTING

INITIALIZE mode
1. SYNC DET
2. SG MODE
3. SG PATTERN
4. SIDE MASK LEVEL
5. FINAL SETUP
6. HMG/HG SERVICE MODE
7. CVT AUTO
8. HDMI INTR POSITION

MUTING

PANEL FACTORY mode
1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL REVICE
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP

MUTING

OPTION mode
1. EDID WRITE MODE
2. ANTENNA MODE
3. AFT

MUTING

Structure of Layers in Service Factory Mode

INFORMATION mode	
├1. VERSION (1)	Flash Versions for PANEL system and MAIN system
├2. VERSION (2)	Flash Versions for DTV system
├3. VERSION (3)	Flash Versions for CCD ucom and HM
├4. MAIN NG	SD histories for MAIN (Going Clear model by SET key)
│└4-1. CLEAR	Select Yes by [➡] key ➡ pushing and hold [SET] key
├5. TEMPERATURE	TEMP 1, TEMP2 and FAN mode are displayed
├6. HOUR METER	Hour meter and number of Power ON are displayed
│└6-1. CLEAR	Select Yes by [➡] key ➡ pushing and hold [SET] key
├7. HDMI SIGNAL INFO 1	For factory use
├8. HDMI SIGNAL INFO 2	Signal info of HDMI are displayed (Detail are on SM)
├9. VDEC SIGNAL INFO	For factory use
├10. DTV TUNING STATUS 1	Detail information for DTV is displayed
├11. DTV TUNING STATUS 2	Detail information for DTV is displayed
├12. DTV TUNING STATUS 3	Detail information for DTV is displayed
├13. DTV TV-GUIDE BER	For production line use
├14. DEBUG INFO	For factory use
PANEL FACTORY mode	Refer to [PANEL FACTORY MODE]
OPTION	
├1. EDID WRITE MODE	For factory use
├2. ANTENNA MODE	For production line use
├3. AFT	For production line use
INITIALIZE	
├1. SYNC DET (+)	For factory use
├2. SG MODE	SG signal from MAIN VDEC (Composite signal is required)
├3. SG PATTERN	For factory use
├4. SIDE MASK LEVEL(+)	For factory use
│├4-1. R MASK LEVEL	
│├4-2. G MASK LEVEL	
│└4-3. B MASK LEVEL	
├5. FINAL SETUP	Set to Factory default settings (it should perform after
│└5-1. DATA RESET	replacing a MAIN board)
├6. HMG/HG SERVICE MODE	Information for a USB device is displayed
│└6-1. MODE SIFT	
├7. CVT AUTO	For factory use
└8. HDMI INTR POSITION(+)	For factory use

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION	Version indication of the panel
2. PANEL WORKS	Indications of the accumulated power-on time, pulse-meter count, and power-on count of the panel
3. POWER DOWN	Indication of the Power-down history
4. SHUT DOWN	Indication of the Shutdown history
5. PANEL-1 ADJ (+)	
├1. X-SUS B	Modification not required because these items are basically for factory presetting
├2. Y-SUS B	
├3. Y-SUSTAIL T1	
├4. Y-SUSTAIL T2	
├5. Y-SUSTAIL W	
├6. XY-RST W1	
├7. XY-RST W2	
├8. VOL SUS	Settings required after replacement of the panel
├9. VOL OFFSET	
├10. VOL RST P	
└11. SUS FREQ.	For AM noise prevention (Depending on the mode, brightness of the screen changes.)
6. PANEL-2 ADJ (+)	
├1. R-HIGH	Parameters for the WB adjustment of the panel, which are required during adjustment after panel replacement
├2. G-HIGH	
├3 .B-HIGH	
├4. R-LOW	
├5. G-LOW	
├6. B-LOW	
└7. ABL	Setting of the power consumption. A setting table is available for each vertical signal.

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

7. PANEL REVISE (+)	
├R-LEVEL	Items for use by engineers
├G-LEVEL	
└B-LEVEL	
8. ETC (+)	
├1. BACKUP DATA	For transferring backup data (after replacement of the DIGITAL Assy)
├2. DIGITAL EEPROM	To clear data of the digital video
├3. PD INFO.	For clearance of data for the corresponding items. The clearing method is the same: Select "CLEAR", using [➡], then hold [SET] pressed for at least 5 seconds. After clearance is completed, {ETC} is automatically selected.
├4. SD INFO.	
├5. HR-MTR INFO.	
├6. PM/B1-B5	
├7. P COUNT INFO.	
└8. MAX TEMP.	
9. RASTER MASK SETUP (+)	
├1. MASK OFF	For use while Raster Mask (full mask) is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. RST MASK 01	
≈ • • • • •	
└25. RST MASK 24	
10. PATTEN MASK SETUP (+)	
├1. MASK OFF	For use while Pattern Mask is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. PTN MASK 01	
≈ • • • • •	
└40. PTN MASK 39	
11. COMBI MASK SETUP (+)	
├1. MASK OFF	For use while Combination Mask is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. CMB MASK 01	
≈ • • • • •	
└11. CMB MASK 10	

1.3 JIGS LIST

■ Cleaning

Name	Part No.	Remarks
Cleaning liquid	GEM1004	Used to fan cleaning. Refer to "2.4 CHASSIS SECTION (1/2).
Cleaning paper	GED-008	

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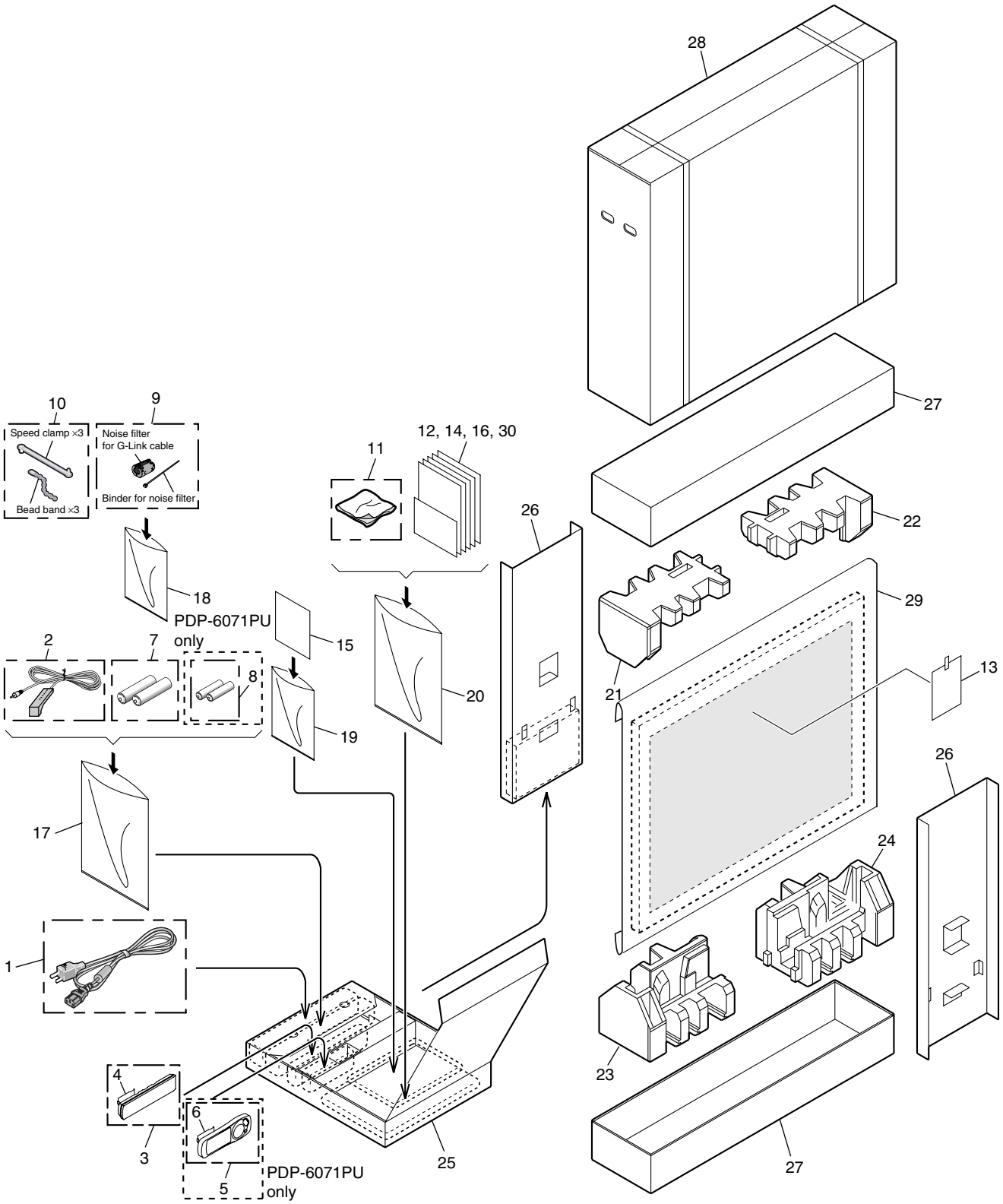
2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING SECTION



(1) PACKING PARTS LIST

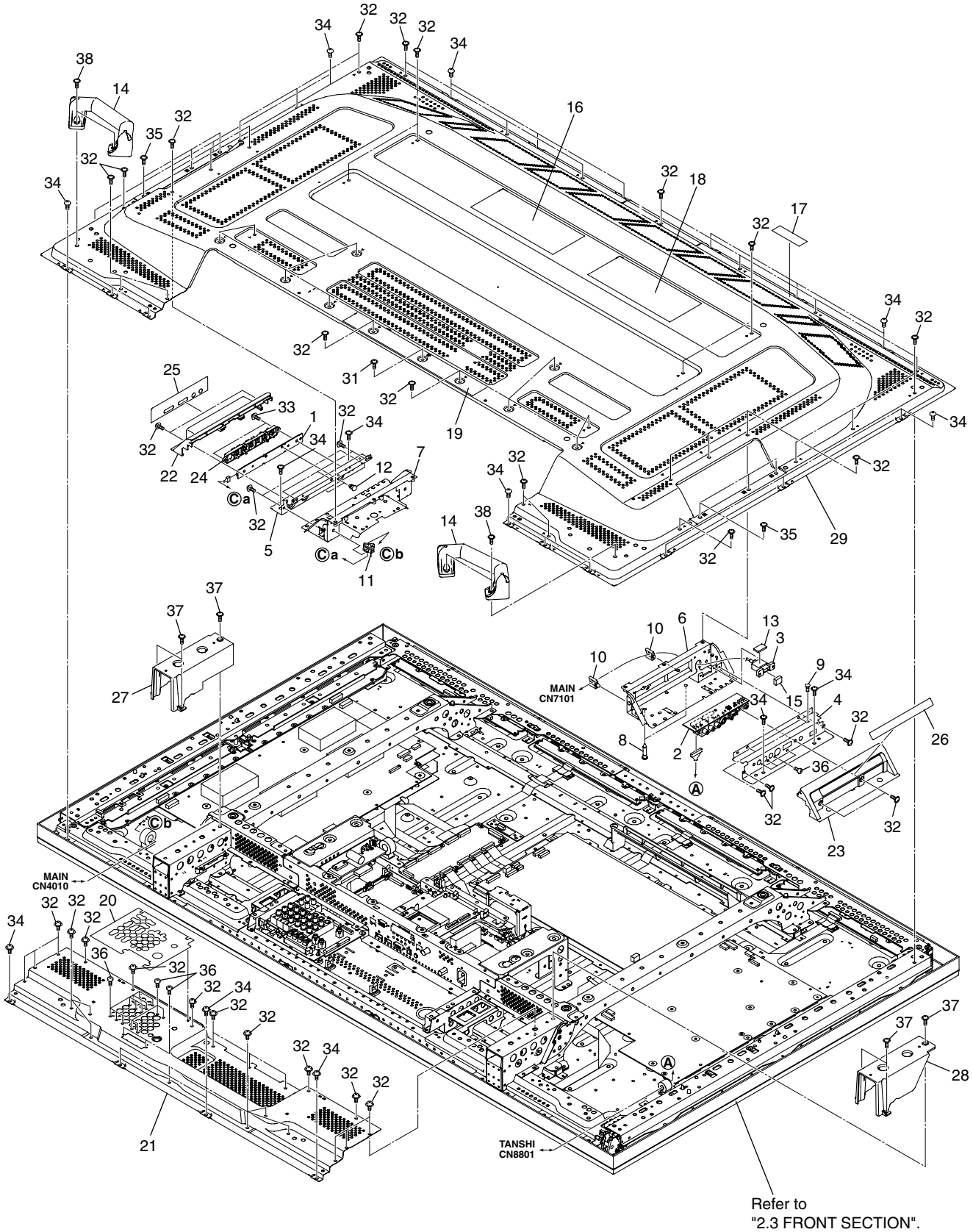
Mark	No.	Description	Part No.
⚠	1	Power Cord (2 m)	ADG1215
	2	G-LINK Cable (3 m)	VDX1010
	3	Remote Control Unit	AXD1536
	4	Battery Cover	AZN2680
	5	Simplified Remote Control Unit	See Contrast table (2)
	6	Battery Cover	See Contrast table (2)
NSP	7	Alkaline Dry Cell Battery (LR6, AA)	VEM1023
NSP	8	Dry Cell Battery (R03, AAA)	See Contrast table (2)
	9	Ferrite Core	CTX1054
	10	Binder Assy	AEC1908
	11	Cleaning Cloth	AED1285
	12	Operating Instructions (English, French, Spanish)	ARE1426
	13	Caution Card	See Contrast table (2)
	14	Cleaning Caution	See Contrast table (2)
NSP	15	Warranty Card	See Contrast table (2)
NSP	16	Card (Register)	See Contrast table (2)
	17	Polyethylene Bag	See Contrast table (2)
	18	Vinyl Bag	See Contrast table (2)
	19	Vinyl Bag S	See Contrast table (2)
	20	Vinyl Bag	See Contrast table (2)
	21	Pad (607 T-L)	See Contrast table (2)
	22	Pad (607 T-R)	See Contrast table (2)
	23	Pad (607 B-L)	See Contrast table (2)
	24	Pad (607 B-R)	See Contrast table (2)
	25	Accessory Box	See Contrast table (2)
	26	Reinforce Carton (607)	See Contrast table (2)
	27	Under Carton (607)	See Contrast table (2)
	28	Upper Carton	See Contrast table (2)
	29	Mirror Mat	See Contrast table (2)
	30	Terminal Position Sheet	AAX3330

(2) CONTRAST TABLE

PDP-6071PU/KUC, KUCXC, PDP-6070PU/KUC and KUCXC types are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-6071PU /KUC	PDP-6071PU /KUCXC	PDP-6070PU /KUC	PDP-6070PU /KUCXC
	5	Simplified Remote Control Unit	AXD1539	AXD1539	Not used	Not used
	6	Battery Cover	AZN2682	AZN2682	Not used	Not used
NSP	8	Dry Cell Battery (R03, AAA)	VEM1036	VEM1036	Not used	Not used
	13	Caution Card	ARM1232	ARM1239	ARM1232	ARM1239
	14	Cleaning Caution	ARM1283	ARM1303	ARM1283	ARM1303
NSP	15	Warranty Card	ARY1138	ARY1196	ARY1138	ARY1196
NSP	16	Card (Register)	VRY1132	ARY1156	VRY1132	ARY1156
NSP	17	Polyethylene Bag	AHG1303	Not used	AHG1303	Not used
	17	Polyethylene Bag	Not used	AHG1394	Not used	AHG1394
	18	Vinyl Bagl	AHG1337	AHG1395	AHG1337	AHG1395
	19	Vinyl Bag S	AHG1338	AHG1347	AHG1338	AHG1347
NSP	20	Vinyl Bag	AHG1340	Not used	AHG1340	Not used
	20	Vinyl Bag	Not used	AHG1347	Not used	AHG1347
	21	Pad (607 T-L)	AHA2562	AHA2617	AHA2562	AHA2617
	22	Pad (607 T-R)	AHA2563	AHA2618	AHA2563	AHA2618
	23	Pad (607 B-L)	AHA2564	AHA2619	AHA2564	AHA2619
	24	Pad (607 B-R)	AHA2565	AHA2620	AHA2565	AHA2620
	25	Accessory Box	AHC1083	AHC1091	AHC1083	AHC1091
	26	Reinforce Carton (607)	AHC1084	AHC1092	AHC1084	AHC1092
	27	Under Carton (607)	AHD3486	AHD3548	AHD3486	AHD3548
	28	Upper Carton	AHD3487	AHD3536	AHD3537	AHD3538
	29	Mirror Mat	AHG1385	AHG1397	AHG1385	AHG1397

2.2 REAR SECTION



(1) REAR SECTION PARTS LIST

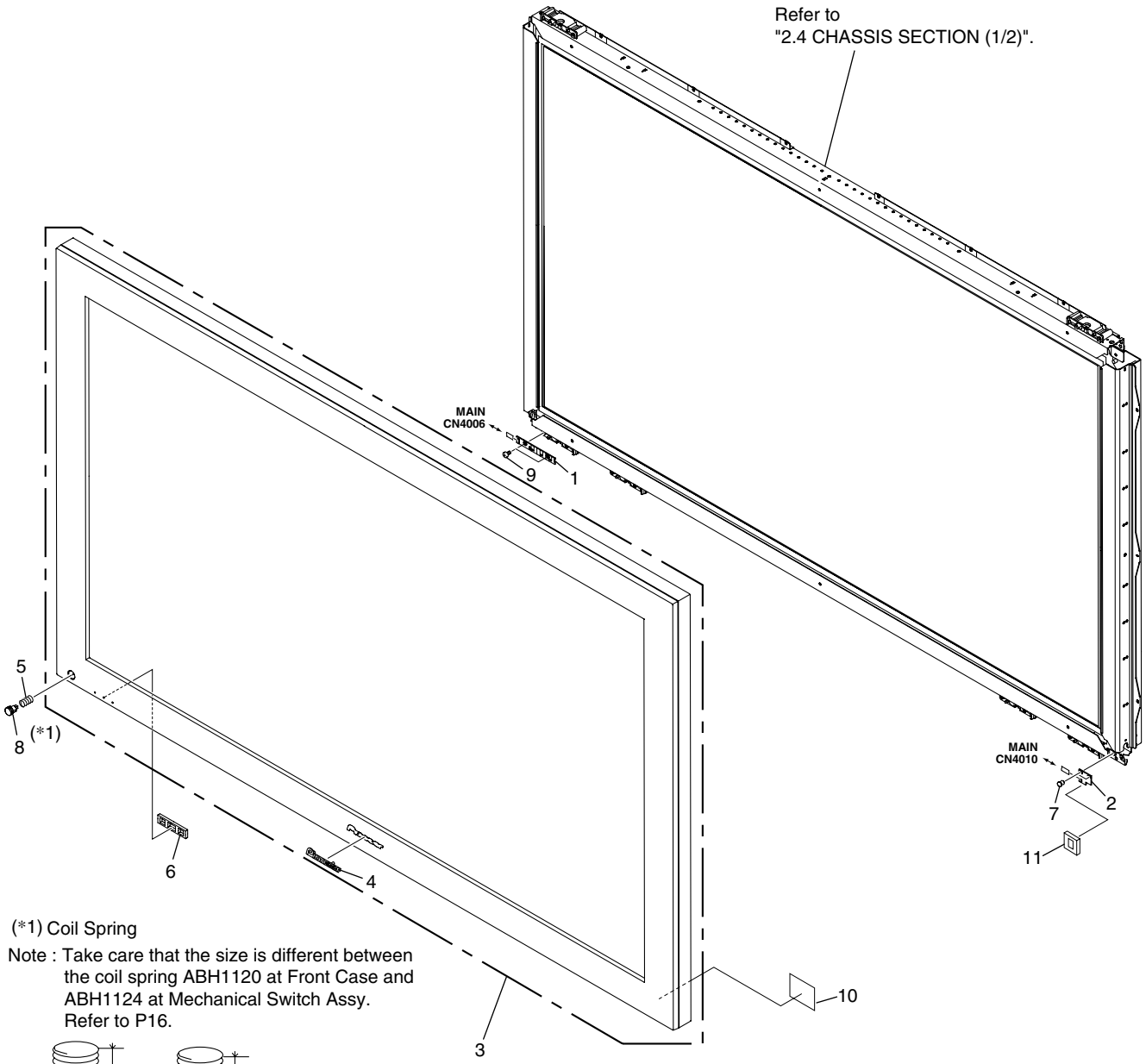
Mark	No.	Description	Part No.
	1	SIDE KEY Assy	AWW1133
	2	SIDE Assy	AWW1157
	3	USB Cable (J301)(120 cm)	ADF1034
	4	Side Input Panel (U)	ANC2392
	5	Function Button Base	ANG2923
	6	Side Input Shield	ANK1834
	7	Function Button Shield	ANK1835
NSP	8	PCB Support	AEC1288
	9	PCB Spacer	AEC1570
	10	Re-use Wire Saddle	AEC1945
	11	Locking Wire Saddle	AEC1948
	12	Locking Card Spacer	AEC2019
	13	USB Spacer	AED1310
	14	Handle	AMR3564
	15	Gasket (USB)	ANK1846
NSP	16	Name Label	See Contrast table (2)
	17	Serial Seal	See Contrast table (2)
	18	Caution Label	See Contrast table (2)
	19	Terminal Display Label A (U/B)	AAX3325
	20	Terminal Display Label B50 (U/B)	AAX3414
	21	Under Cover (60)	ANC2433
	22	Function Button Panel	AMB2906
	23	Side Input Cover	AMB2911
	24	Function Button	AAC1562
	25	Function Button Sheet (U)	AAK2895
	26	Input Cover Label U	AAX3363
	27	Sub Frame Cover L	AMR3586
	28	Sub Frame Cover R	AMR3587
	29	Rear Case (607)	ANE1657
	30	•••••	
	31	Screw	ABA1341
	32	Screw	AMZ30P060FTB
	33	Screw	AMZ30P080FTC
	34	Screw	APZ30P100FTB
	35	Screw	APZ40P100FTB
	36	Screw	BPZ30P080FTB
	37	Screw	PMB30P100FTB
	38	Screw	PMB40P120FTB

(2) CONTRAST TABLE

PDP-6071PU/KUC, KUCXC, PDP-6070PU/KUC and KUCXC types are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-6071PU /KUC	PDP-6071PU /KUCXC	PDP-6070PU /KUC	PDP-6070PU /KUCXC
NSP	16	Name Label	AAL2786	AAL2839	AAL2840	AAL2841
	17	Serial Seal	AAX3143	Not used	AAX3143	Not used
NSP	17	Serial Seal	Not used	AAX3182	Not used	AAX3182
	18	Caution Label	AAX3393	AAX3430	AAX3393	AAX3430

2.3 FRONT SECTION



(*1) Coil Spring

Note : Take care that the size is different between the coil spring ABH1120 at Front Case and ABH1124 at Mechanical Switch Assy. Refer to P16.

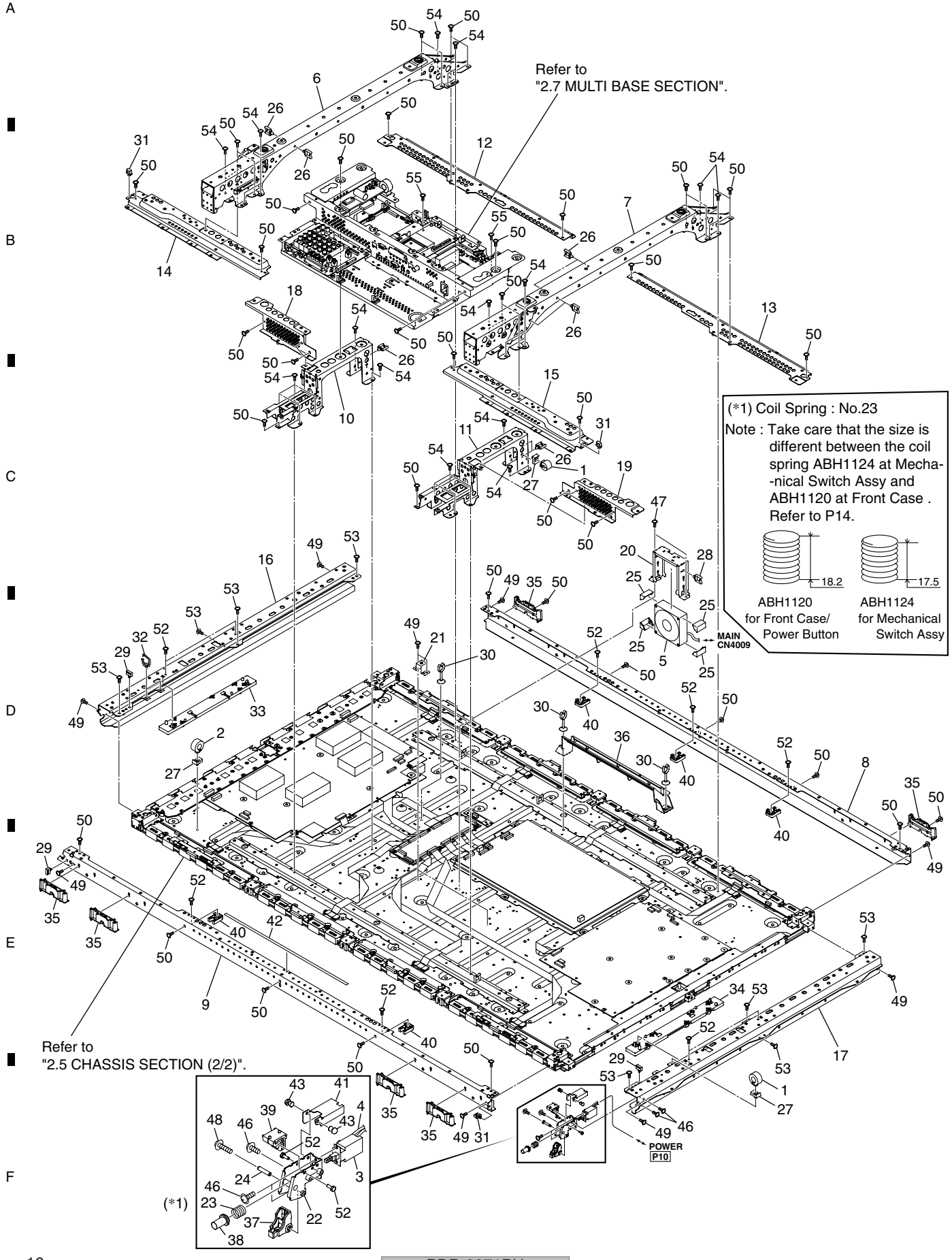
ABH1120 for Front Case/ Power Button

ABH1124 for Mechanical Switch Assy

FRONT SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	42 & 60 LED Assy	AWW1134
	2	60 IR Assy	AWW1137
	3	Front Case Assy 607	AMB2930
	4	Pioneer Name Plate	AAM1109
	5	Coil Spring	ABH1120
	6	Blind Cushion	AEB1449
	7	Nyron Rivet	AEC1671
	8	Power Button	AAD4147
	9	Screw	BPZ30P080FTB
	10	IR Reducer	AAX3455
	11	IR Block Cushion	AEB1465

2.4 CHASSIS SECTION (1/2)



(1) CHASSIS SECTION (1/2) PARTS LIST

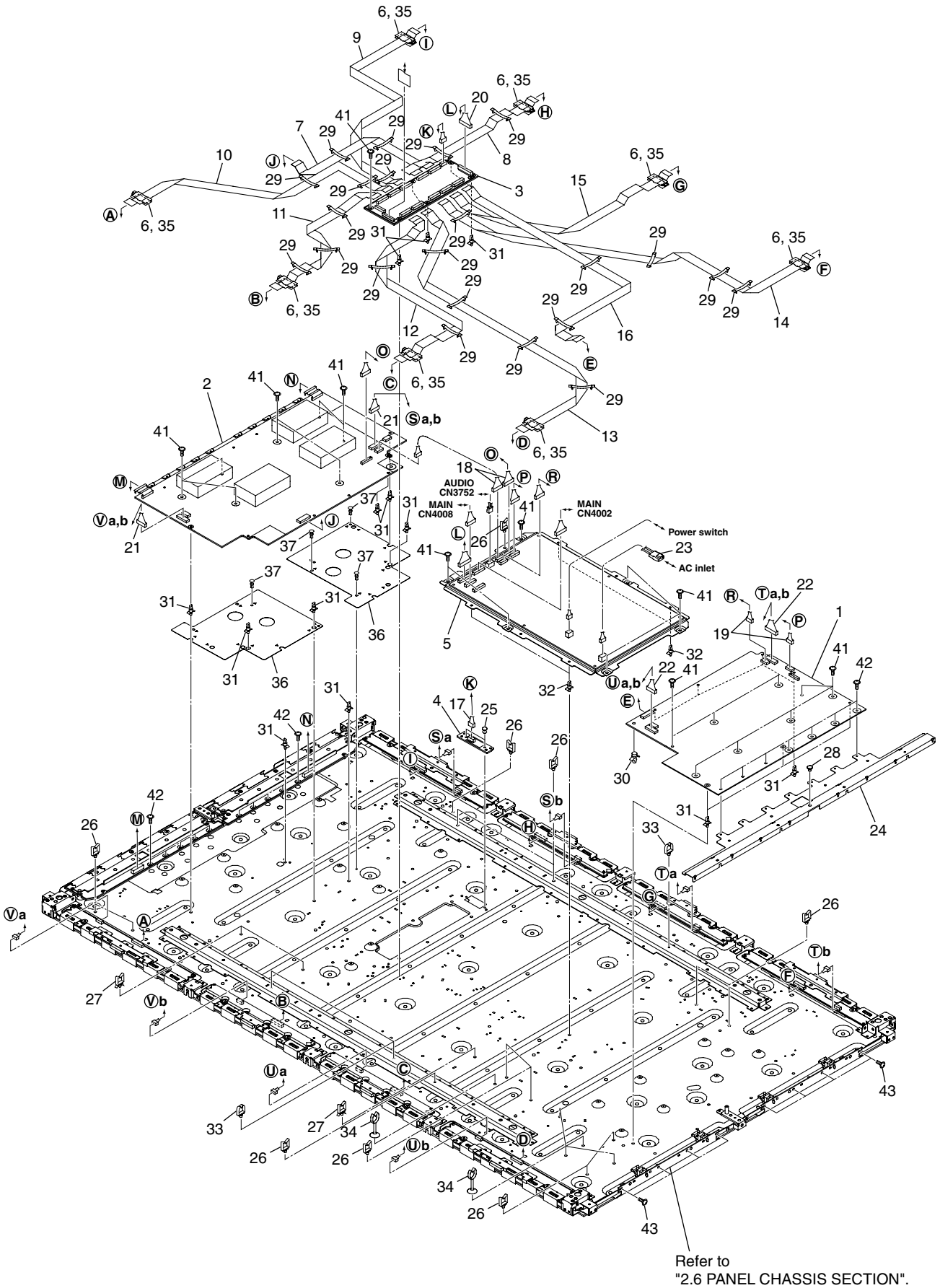
Mark	No.	Description	Part No.
	1	Ferrite Core	ATX1044
	2	Ferrite Core	ATX1060
⚠	3	Power Switch (S1)	ASG1084
	4	Housing Wire (J103)	ADX3412
⚠	5	Fan Motor 80 x 25L	AXM1058
	6	Sub Frame L Assy 607	ANA1966
	7	Sub Frame R Assy 607	ANA1965
	8	Front Chassis H Assy U	ANA1967
	9	Front Chassis H Assy D	ANA1986
	10	Multi Base Frame L	ANA1970
	11	Multi Base Frame R	ANA1969
	12	Upper Support L	ANA1975
	13	Upper Support R	ANA1976
	14	Under Support L	ANA1977
	15	Under Support R	ANA1978
	16	Front Chassis VL Assy 60	ANA2043
	17	Front Chassis VR Assy 60	ANA2044
	18	Terminal Panel L 60	ANC2420
	19	Terminal Panel R 60	ANC2421
	20	Fan Holder	ANG2833
	21	Multi Base Holder	ANG2937
	22	Switch Holder	ANG3007
	23	Coil Spring	ABH1124
	24	Collar	ABN1076
	25	Floating Rubber 80	AEB1427
	26	Wire Saddle	AEC1745
	27	Ferrite Core Holder	AEC1818
	28	Re-use Wire Saddle	AEC1945
	29	Locking Wire Saddle	AEC1948
	30	Harness Lifter 28	AEC1982
	31	Re-use Wire Saddle	AEC2099
	32	Re-use Wire Saddle	AEC2100
	33	Function Button Holder	AMR3561
	34	Side Input Holder	AMR3562
	35	Front Case Support	AMR3563
	36	Protector	AMR3585
	37	Switch Arm	AMR3588
	38	Switch Pin	AMR3589
	39	Switch Pin Holder	AMR3590
	40	Front Chassis H Guide	AMR3600
	41	Switch Protection Sheet	AMR3644
	42	Gasket MTB	ANK1879
	43	Rivet A	BEC1158
	44	•••••	
	45	•••••	
	46	Screw	ABA1341
	47	Screw	See Contrast table (2)
	48	Screw (M3 x 22)	ABA1356
	49	Screw	ABZ30P080FTC
	50	Screw	AMZ30P060FTB
	51	•••••	
	52	Screw	BPZ30P080FTB
	53	Screw	PMB30P080FTB
	54	Screw	TBZ40P080FTB
	55	Screw	ABA1364

(2) CONTRAST TABLE

PDP-6071PU/KUC, KUCXC, PDP-6070PU/KUC and KUCXC types are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-6071PU /KUC	PDP-6071PU /KUCXC	PDP-6070PU /KUC	PDP-6070PU /KUCXC
	47	Screw	ABA1351	ABA1313	ABA1351	ABA1313

2.5 CHASSIS SECTION (2/2)



(1) CHASSIS SECTION (2/2) PARTS LIST

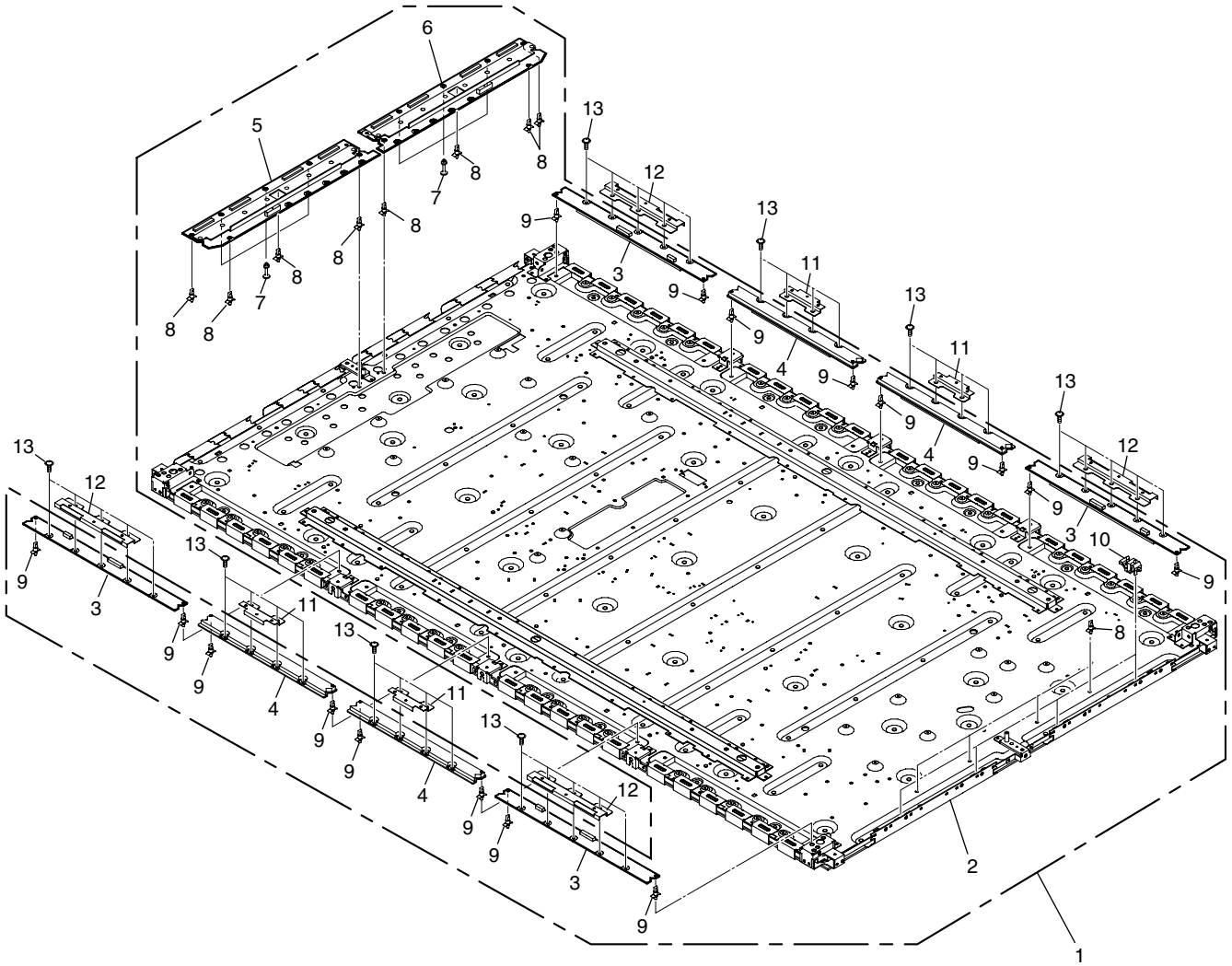
Mark	No.	Description	Part No.
	1	60 X DRIVE Assy	AWV2366
	2	60 Y DRIVE Assy	AWV2367
	3	60 DIGITAL Assy	AWW1190
	4	PANEL SENSOR Assy	AWW1191
⚠	5	POWER SUPPLY Unit	AXY1139
	6	Ferrite Core	ATX1048
	7	Flexible Cable (J201)	ADD1453
	8	Flexible Cable (J202)	ADD1454
	9	Flexible Cable (J203)	ADD1455
	10	Flexible Cable (J204)	ADD1456
	11	Flexible Cable (J205)	ADD1457
	12	Flexible Cable (J220)	ADD1458
	13	Flexible Cable (J221)	ADD1459
	14	Flexible Cable (J222)	ADD1460
	15	Flexible Cable (J223)	ADD1461
	16	Flexible Cable (J206)	ADD1462
	17	5P Housing Wire (J110)	ADX3359
	18	9P&7/6P Housing Wire (J102)	ADX3406
	19	8P&6P Housing Wire (J107)	ADX3407
	20	14P Housing Wire (J109)	ADX3408
	21	10P/5P Housing Wire (J104)(J127)	ADX3409
	22	10P/5P Housing Wire (J114)(J128)	ADX3410
	23	Housing Wire (J123)	ADX3411
	24	Conductive Plate X	ANG2962
	25	Nyron Rivet	AEC1671
	26	Wire Saddle	AEC1745
	27	Wire Saddle	AEC1751
	28	PCB Spacer	AEC1819
	29	Flat Clamp	AEC1879
	30	PCB Support	AEC1938
	31	Re-use PCB Spacer	AEC1941
	32	PCB Spacer	AEC1947
	33	Mini Clamp	AEC1967
	34	Harness Lifter 28	AEC1982
	35	Ferrite Clamp	AEC1986
	36	Y Drive Protection Sheet A	AMR3640
	37	Rivet A	BEC1158
	38	•••••	
	39	•••••	
	40	•••••	
	41	Screw	See Contrast table (2)
	42	Screw	ABA1364
	43	Screw (M3 x 6)	ABA1366

(2) CONTRAST TABLE

PDP-6071PU/KUC, KUCXC, PDP-6070PU/KUC and KUCXC types are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-6071PU /KUC	PDP-6071PU /KUCXC	PDP-6070PU /KUC	PDP-6070PU /KUCXC
	41	Screw	ABA1351	ABA1313	ABA1351	ABA1313

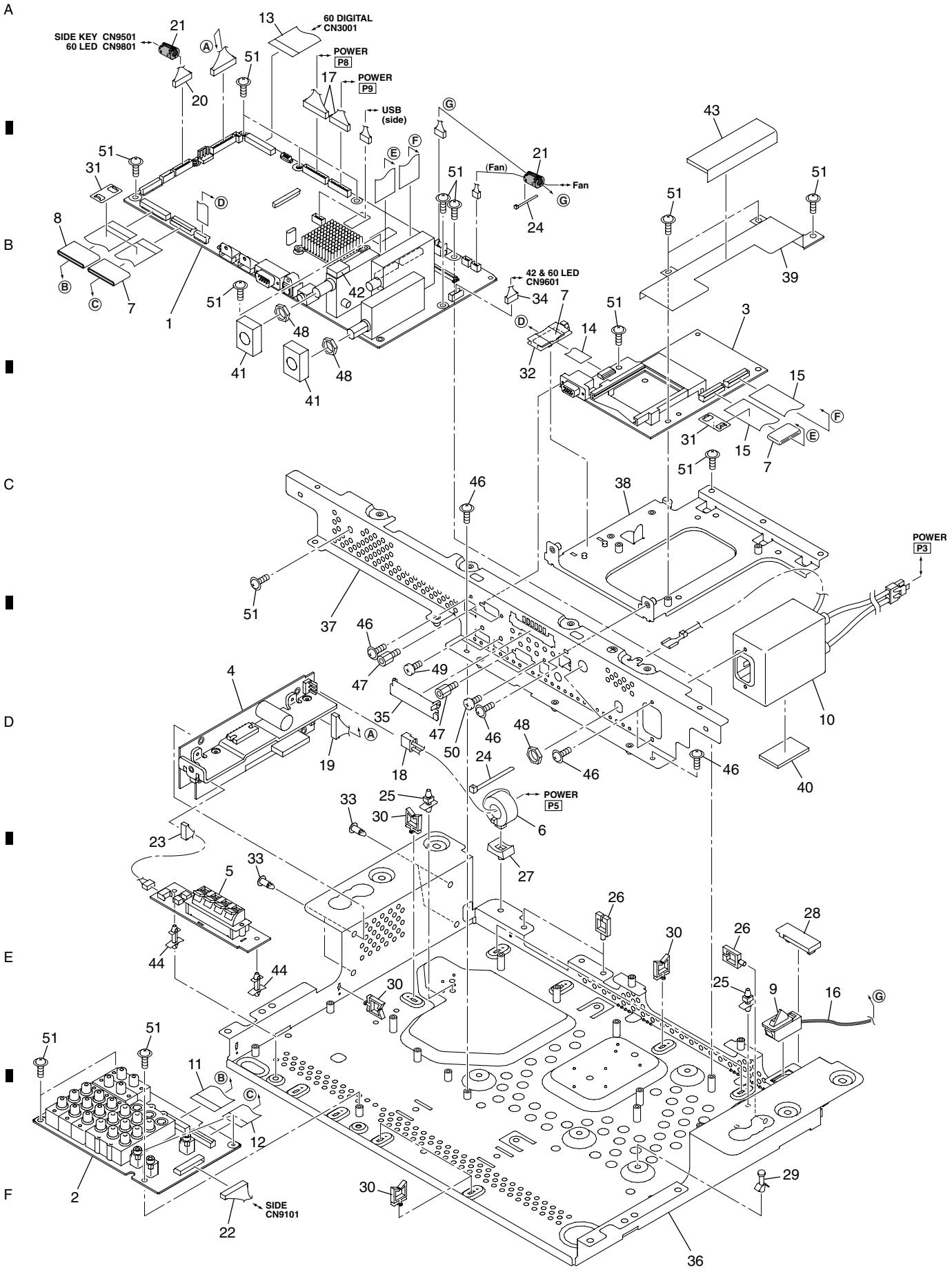
2.6 PANEL CHASSIS SECTION



PANEL CHASSIS SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Panel Chassis (607) Assy	AWU1178
NSP	2	Plasma Panel (60DC) Assy	AWU1179
NSP	3	60 ADDRESS L Assy	AWW1188
NSP	4	60 ADDRESS S Assy	AWW1189
	5	607 SCAN A Assy	AWW1186
	6	607 SCAN B Assy	AWW1187
	7	PCB Spacer	AEC1372
	8	PCB Spacer	AEC1944
	9	PCB Spacer	AEC1947
	10	Conductive Plate Holder	AMR3446
	11	Address Plate A Assy	ANG3036
	12	Address Plate B Assy	ANG3037
	13	Screw	ABA1367

2.7 MULTIBASE SECTION



(1) MULTIBASE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	MAIN Assy	AWV2312
	2	TANSHI Assy	AWW1156
	3	POD Assy	AWW1154
	4	AUDIO Assy	AWW1131
	5	SP TERMINAL Assy	AWW1132
	6	Ferrite Core	ATX1044
	7	Ferrite Core	ATX1048
	8	Ferrite Core	ATX1064
⚠	9	Power Switch (S2)(TRAP)	ASG1089
⚠	10	AC Inlet (CN1)	AKP1300
	11	Flexible Cable (J210)	ADD1441
	12	Flexible Cable (J211)	ADD1442
	13	Flexible Cable (J207)	ADD1445
	14	Flexible Cable (J213)	See Contrast table (2)
	15	Flexible Cable (J214)(J215)	ADD1447
	16	3P Housing Wire (J121)	ADX3348
	17	13P&11P Housing Wire (J119)	ADX3402
	18	3P Housing Wire (J112)	ADX3469
	19	11P Housing Wire (J105)	ADX3360
	20	7&6/4P Housing Wire (J111)	ADX3405
	21	Ferrite Core	CTX1054
	22	14P Housing Wire (J118)	ADX3413
	23	8/4P Housing Wire (J116)	ADX3345
	24	Binder	AEC-093
	25	Locking Card Spacer	AEC1429
	26	Wire Saddle	AEC1745
	27	Ferrite Core Holder	AEC1818
	28	Clamp	AEC1884
	29	Card Spacer	AEC1889
	30	Re-use Wire Saddle	AEC1945
	31	Ferrite Stopper	AEC1981
	32	Ferrite Clamp	AEC1986
	33	Locking Card Spacer	AEC2019
	34	6P Housing Wire (J113)	ADX3404
	35	POD Cover	AMR3542
	36	Multi Base (U) Assy	ANA1951
	37	Terminal Panel A (U/B)	ANC2394
	38	POD Stay A	ANG2933
	39	Tuner Stay U	ANG3028
	40	Gasket UI	ANK1886
	41	Gasket UD	ANK1883
	42	Gasket UA	ANK1866
⚠	43	Gasket UB	ANK1867
	44	Locking Card Spacer	AEC2093
	45	•••••	
	46	Screw	AMZ30P060FTB
	47	Hex. Head Screw	BBA1051
	48	Nut	BBN1005
	49	Screw	BMZ30P060FTB
	50	Screw	BPZ30P080FTB
	51	Screw	PMB30P080FNI

(2) CONTRAST TABLE

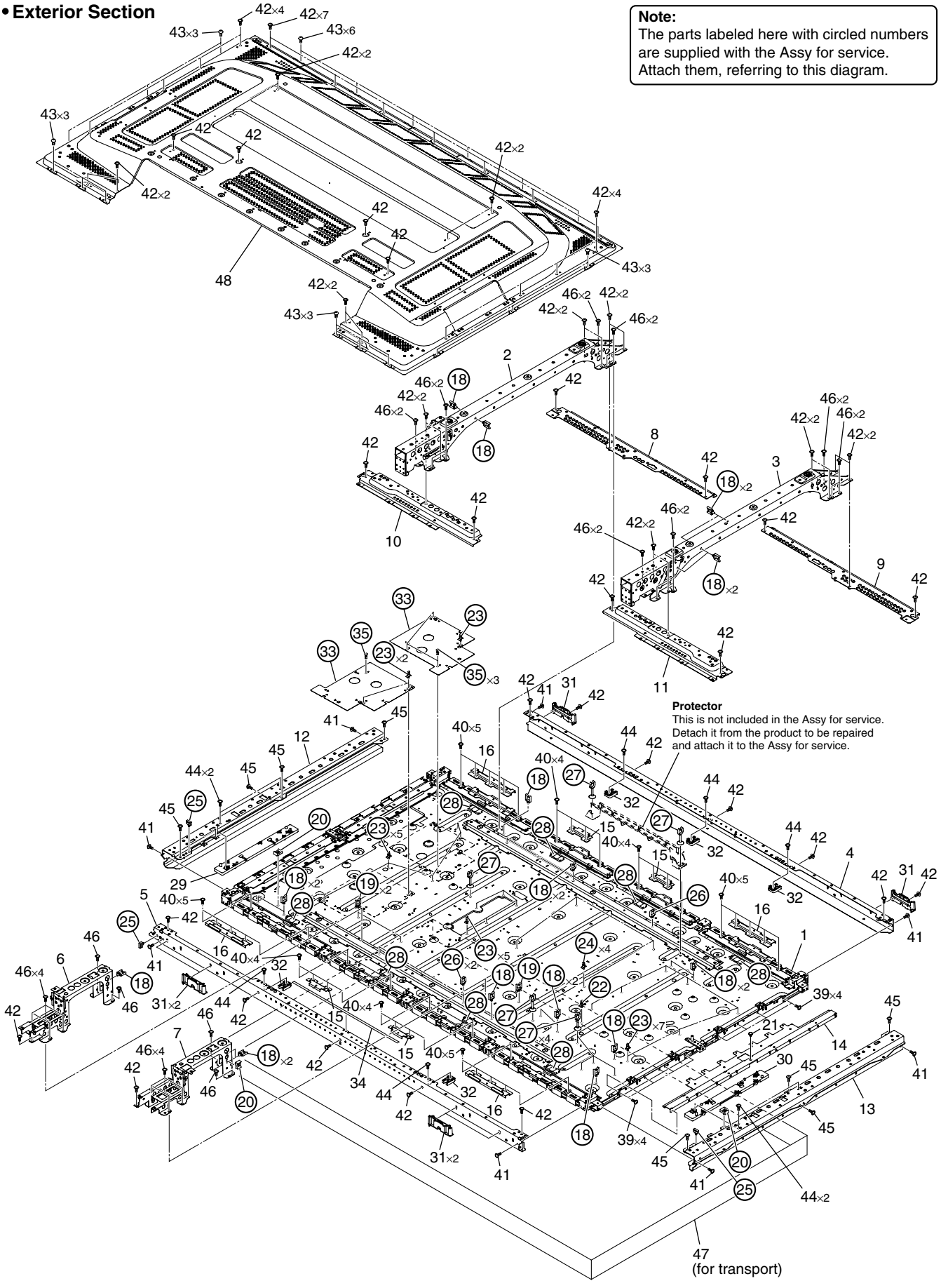
PDP-6071PU/KUC, KUCXC, PDP-6070PU/KUC and KUCXC types are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-6071PU /KUC	PDP-6071PU /KUCXC	PDP-6070PU /KUC	PDP-6070PU /KUCXC
	14	Flexible Cable (J213)	ADD1470	ADD1446	ADD1470	ADD1446

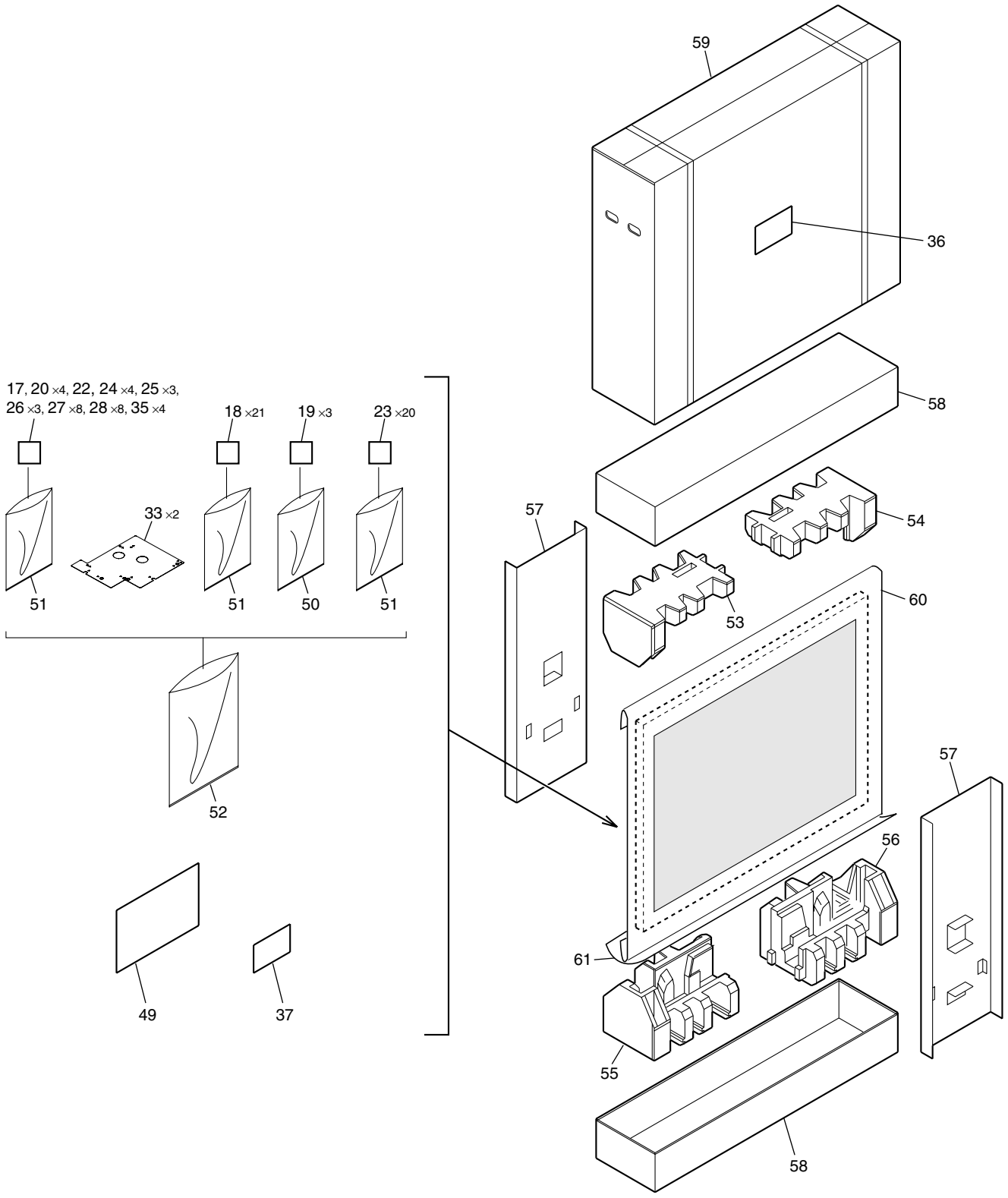
2.8 PDP SERVICE ASSY 607 (AWU1228)

• Exterior Section

Note:
The parts labeled here with circled numbers are supplied with the Assy for service. Attach them, referring to this diagram.


Protector
This is not included in the Assy for service. Detach it from the product to be repaired and attach it to the Assy for service.
47
(for transport)

• Packing Section



PDP SERVICE ASSY 607 (AWU1228) PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Panel Chassis (607) Assy	AWU1178
	2	Sub Frame L Assy 607	ANA1966
	3	Sub Frame R Assy 607	ANA1965
	4	Front Chassis H Assy U	ANA1967
	5	Front Chassis H Assy D	ANA1986
	6	Multi Base Frame L	ANA1970
	7	Multi Base Frame R	ANA1969
	8	Upper Support L	ANA1975
	9	Upper Support R	ANA1976
	10	Under Support L	ANA1977
	11	Under Support R	ANA1978
	12	Front Chassis VL Assy 60	ANA2043
	13	Front Chassis VR Assy 60	ANA2044
	14	Conductive Plate X	ANG2962
	15	Address Plate A Assy	ANG3036
	16	Address Plate B Assy	ANG3037
	17	Binder	AEC-093
	18	Wire Saddle	AEC1745
	19	Wire Saddle	AEC1751
	20	Ferrite Core Holder	AEC1818
	21	PCB Spacer	AEC1819
	22	PCB Support	AEC1938
	23	Re-use PCB Spacer	AEC1941
	24	PCB Spacer	AEC1947
	25	Locking Wire Saddle	AEC1948
	26	Mini Clamp	AEC1967
	27	Harness Lifter 28	AEC1982
	28	Ferrite Clamp	AEC1986
	29	Function Button Holder	AMR3561
	30	Side Input Holder	AMR3562
	31	Front Case Support	AMR3563
	32	Front Chassis H Guide	AMR3600
	33	Y Drive Protection Sheet A	AMR3640
	34	Gasket MTB	ANK1879
	35	Rivet A	BEC1158
	36	Caution Label	AAX3031
NSP	37	Drive Voltage Label	ARW1097
	38	• • • • •	
	39	Screw (M3 x 6)	ABA1366
	40	Screw	ABA1367
	41	Screw	ABZ30P080FTC
	42	Screw	AMZ30P060FTB
	43	Screw	APZ30P100FTB
	44	Screw	BPZ30P080FTB
	45	Screw	PMB30P080FTB
	46	Screw	TBZ40P080FTB
	47	Front Case Assy (607service)	AMB2984
	48	Rear Case (607)	ANE1657
	49	Caution Card (service)	ARM1322
	50	Polyethylene Bag	AHG1337
	51	Polyethylene Bag S	AHG1338
	52	Polyethylene Bag	AHG1340
	53	Pad (607 T-L)	AHA2562
	54	Pad (607 T-R)	AHA2563
	55	Pad (607 B-L)	AHA2564
	56	Pad (607 B-R)	AHA2565
	57	Reinforce Carton (607)	AHC1084
	58	Under Carton (607)	AHD3486
	59	Upper Carton (607service)	AHD3564
	60	Protect Sheet	AHG1401
	61	Mirror Mat	AHG1402

3. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 x 10^1 → 561 ..... RD1/4PU[5][6][1]J
47k Ω → 47 x 10^3 → 473 ..... RD1/4PU[4][7][3]J
0.5 Ω → R50 ..... RN2H[R][5][0]K
1 Ω → 1R0 ..... RS1P[1][R][0]K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 x 10^1 → 5621 ..... RN1/4PC[5][6][2][1]F

Mark	No.	Description	Part No.
LIST OF ASSEMBLIES			
NSP	1	..PANEL CHASSIS (607) ASSY	AWU1178
NSP	2	..60 ADDRESS ASSY	AWV2363
NSP	3	..60 ADDRESS L ASSY	AWW1188
NSP	3	..60 ADDRESS S ASSY	AWW1189
NSP	2	..60 SCAN ASSY	AWV2364
	3	..607 SCAN A ASSY	AWW1186
	3	..607 SCAN B ASSY	AWW1187
	1	..60 X DRIVE ASSY	AWV2366
	1	..60 Y DRIVE ASSY	AWV2367
NSP	1	..60 DIGITAL ASSY	AWV2365
	2	..60 DIGITAL ASSY	AWW1190
	2	..SENSOR ASSY	AWW1191
	1	..MAIN ASSY (US BB)	AWV2312
NSP	1	..I/O ASSY	AWV2313
	2	..POD ASSY	AWW1154
	2	..TANSHI ASSY	AWW1156
	2	..SIDE ASSY	AWW1157
NSP	1	..60 AUDIO FUKUGO ASSY	AWV2347
	2	..AUDIO ASSY	AWW1131
	2	..SP TERMINAL ASSY	AWW1132
	2	..SIDE KEY ASSY	AWW1133
	2	..42 & 60 LED ASSY	AWW1134
	2	..60 IR ASSY	AWW1137
⚠	1	..POWER SUPPLY UNIT	AXY1139

Mark	No.	Description	Part No.
60 ADDRESS L ASSY			
[60 ADR L LOGIC]			
SEMICONDUCTORS			
IC	1601		PEE003B
MISCELLANEOUS			
L	1601	CHIP SOLID INDUCTOR	QTL1013
CN	1601	PH CONNECTOR	AKM1291
CN	1602	40P CONNECTOR	AKM1348
RESISTORS			
R	1601–1605		RS1/16SS1000F
Other Resistors			RS1/16SS###J

Mark	No.	Description	Part No.
CAPACITORS			
C	1601–1604,1607		CKSSYF104Z16
C	1605,1606		CKSSYB102K50
C	1608,1609		CKSRYB105K6R3
C	1651–1656		ACG1105
C	1657–1662		CKSSYF104Z16
[60 ADR L RESONANCE]			
SEMICONDUCTORS			
IC	1720		TND307TD
Q	1710,1711		QSZ2
Q	1731,1741,1751,1761		HAT3041R
Q	1771,1781		HAT3041R
Q	1790		2SA1163
Q	1791		RN1901
D	1710,1737,1747,1757		1SS302
D	1731,1741,1751,1761		UDZS15(B)
D	1734,1744,1754,1764		EP05FA20
D	1736,1738,1746,1748		1SS355
D	1756,1758,1766,1768		1SS355
D	1767,1777,1787		1SS302
D	1771,1781		UDZS15(B)
D	1774,1784		EP05FA20
D	1776,1778,1786,1788		1SS355
MISCELLANEOUS			
L	1730,1740,1750,1760		ATH1212
L	1770,1780		ATH1212
RESISTORS			
R	1710,1711		RS1/16SS220J
Other Resistors			RS1/16S###J
CAPACITORS			
C	1710		CKSYB105K25
C	1711		ACG1098
C	1730,1740,1750,1760		ACG1137
C	1731,1741,1751,1761		ACG1136
C	1770,1780		ACG1137
C	1771,1781		ACG1136
60 ADDRESS S ASSY			
[60 ADR S LOGIC]			
SEMICONDUCTORS			

Mark	No.	Description	Part No.
	IC	1801	PEE003B
		MISCELLANEOUS	
	L	1801	QTL1013
	CN	1801 PH CONNECTOR 5P	AKM1291
	CN	1802 40P CONNECTOR	AKM1348
		RESISTORS	
	R	1801–1805	RS1/16SS1000F
	Other Resistors		RS1/16SS###J
		CAPACITORS	
	C	1801–1804,1807	CKSSYF104Z16
	C	1805,1806	CKSSYB102K50
	C	1808,1809	CKSRYB105K6R3
	C	1851–1855	ACG1105
	C	1857–1861	CKSSYF104Z16
		[60 ADR S RESONANCE]	
		SEMICONDUCTORS	
	IC	1920	TND307TD
	Q	1910,1911	QSZ2
	Q	1931,1941,1951,1961	HAT3041R
	Q	1971	HAT3041R
	Q	1990	2SA1163
	Q	1991	RN1901
	D	1910,1937,1947,1957	1SS302
	D	1931,1941,1951,1961	UDZS15(B)
	D	1934,1944,1954,1964	EP05FA20
	D	1936,1938,1946,1948	1SS355
	D	1956,1958,1966,1968	1SS355
	D	1967,1977	1SS302
	D	1971	UDZS15(B)
	D	1974	EP05FA20
	D	1976,1978	1SS355
		MISCELLANEOUS	
	L	1930,1940,1950,1960	ATH1212
	L	1970	ATH1212
		RESISTORS	
	R	1910,1911	RS1/16SS220J
	Other Resistors		RS1/16S###J
		CAPACITORS	
	C	1910	CKSYB105K25
	C	1911	ACG1098
	C	1930,1940,1950,1960	ACG1137
	C	1931,1941,1951,1961	ACG1136
	C	1970	ACG1137
	C	1971	ACG1136

607 SCAN A ASSY

		SEMICONDUCTORS	
	IC	2801–2806	SN755870KPZT-P
	D	2803–2807,2809	1SS302
	D	2810	1SS355
		MISCELLANEOUS	
	CN	2801 13P CONNECTOR	AKP1261
	CN	2802–2805 100PIN CONNECTOR	AKM1360
	2801	SCREW	ABA1349
	2801	SCAN SIRICON	AEH1113
		RESISTORS	
	R	2801,2803	RS1/8SQ124J
	R	2805,2810,2813,2816	RAB4C221J
	R	2819,2822	RAB4C221J
	Other Resistors		RS1/16S###J
		CAPACITORS	
	C	2801,2802,2811,2812	ACG1088
	C	2803,2813,2823,2833	CKSRYB105K6R3
	C	2804,2806,2807,2814	CCSRCH220J50
	C	2808–2810,2818–2820	CCSRCH151J50
	C	2816,2817,2824,2826	CCSRCH220J50
	C	2821,2822,2831,2832	ACG1088
	C	2827,2834,2836,2837	CCSRCH220J50
	C	2828–2830,2838–2840	CCSRCH151J50
	C	2841,2842,2851,2852	ACG1088
	C	2843,2853	CKSRYB105K6R3
	C	2844,2846,2847,2854	CCSRCH220J50
	C	2848–2850,2858–2860	CCSRCH151J50
	C	2856,2857	CCSRCH220J50

607 SCAN B ASSY

		SEMICONDUCTORS	
	IC	2901–2906	SN755870KPZT-P
	D	2902,2904–2908	1SS302
	D	2909	1SS355
		MISCELLANEOUS	
	CN	2901 13P CONNECTOR	AKP1261
	CN	2902–2905 100PIN CONNECTOR	AKM1360
		RESISTORS	
	R	2903,2908,2911,2914	RAB4C221J
	R	2917,2920	RAB4C221J
	R	2921,2923	RS1/8SQ124J
	Other Resistors		RS1/16S###J
		CAPACITORS	
	C	2901,2902,2911,2912	ACG1088
	C	2903,2913,2923,2933	CKSRYB105K6R3
	C	2905–2907,2915–2917	CCSRCH220J50
	C	2908–2910,2918–2920	CCSRCH151J50
	C	2921,2922,2931,2932	ACG1088
	C	2925–2927,2935–2937	CCSRCH220J50
	C	2928–2930,2938–2940	CCSRCH151J50
	C	2941,2942,2951,2952	ACG1088
	C	2943,2953	CKSRYB105K6R3
	C	2945–2947,2955–2957	CCSRCH220J50
	C	2948–2950,2958–2960	CCSRCH151J50

Mark	No.	Description	Part No.

MAIN ASSY

[BOARD IF BLOCK(U)]

SEMICONDUCTORS

IC	4001–4005		TC74VCX541FT
Q	4001,4002		DTC124EUA
Q	4003		RN2902
Q	4004		DTA124EUA

MISCELLANEOUS

L	4001–4005		BTX1042
F	4001–4003,4011–4016		CTF1557
F	4005,4006		VTF1084
CN	4001,4004		AKM1349
CN	4005		AKM1348
CN	4006		KM200NA6
CN	4009		AKM1274
CN	4013		AKM1233
CN	4018		AKM1213

RESISTORS

R	4001RAB4CQ470J		
R	4002,4018		RS1/16S102J
R	4012,4017,4048		RS1/16S75R0F
R	4016		RS1/16S0R0J
R	4021–4024		BCN1067
R	4073,4074		RS1/10S0R0J
Other Resistors			RS1/16SS###J

CAPACITORS

C	4001–4003,4007,4027		CKSSYB104K10
C	4004		CCSSCH101J50
C	4006,4009,4010,4026		CCSSCH221J50
C	4011,4012,4017,4018		DCH1201
C	4013,4020,4021,4023		CKSSYB102K50
C	4014		CKSSYF104Z16
C	4016		ACG1128
C	4019,4022,4025,4030		CKSRYB102K50
C	4024		CKSSYB102K50
C	4033,4036,4039		CKSRYB102K50
C	4043		CKSSYB104K10
C	4051–4053		CCSSCH470J50

[POWER 0 BLOCK(U)]

SEMICONDUCTORS

IC	4101,4105		S-1132B18-U5
IC	4102,4103		LTC3412EFE
IC	4104,4111		NJM2846DL3-05
IC	4106		NJM2886DL3-15
IC	4107		NJM2846DL3-33
IC	4108		NJM2846DL3-18
IC	4110		PQ090DNA1ZPH
Q	4101,4110		RN1902
Q	4104		DTC124EUA
Q	4105,4106		UPA1917TE
Q	4107,4108,4112,4113		2SC4116
Q	4109		2SD2114K
D	4101–4110		1SS355
D	4111,4114,4115		1SS357

MISCELLANEOUS

L	4101		BTX1042
L	4102,4106		BTX1039
L	4108,4109		ATH1194

RESISTORS

R	4107,4110,4134–4136		RS1/10S0R0J
R	4119,4131,4146		RS1/16SS3003D
R	4120		RS1/16SS2003D
R	4123,4145		RS1/16SS1502F
R	4124		RS1/16SS6202D
R	4129		RS1/16SS3903D
R	4133		RS1/16SS1503D
R	4139		RS1/10S0R0J
R	4148		RS1/16S102J
Other Resistors			RS1/16SS###J

CAPACITORS

C	4101,4103,4106,4108		CKSRYB105K10
C	4102,4104,4105,4107		DCH1201
C	4109,4111,4116,4119		DCH1201
C	4110,4117		CCSSCH101J50
C	4112		CCG1232
C	4113,4128		CKSSYB103K16
C	4114		BCG1050
C	4120,4121,4135,4156		CKSSYB104K10
C	4122		CCSSCH220J50
C	4124,4126		DCH1165
C	4125		CKSRYB104K16
C	4127		CKSRYB105K10
C	4129		CCSSCH390J50
C	4132,4133,4136,4137		BCG1059
C	4138,4140		CCSSCH221J50
C	4139		CCSRCH101J50
C	4142		BCG1059
C	4147		CCSRCH102J50
C	4165		DCH1201
C	4172		CKSSYB104K10

[ATUNER BLOCK(U)]

SEMICONDUCTORS

IC	4401		TC74HC4066AFT
IC	4402		AN5832SA
Q	4401,4416		DTC124EUA
Q	4402,4405,4409,4417		2SA1586
Q	4403		DTA124EUA
Q	4404,4406–4408,4410		2SC4116
Q	4411		2SC4116
Q	4413–4415		HN1B04FU
Q	4418		2SA1586
D	4401		1SS355
D	4402		UDZS30(B)

MISCELLANEOUS

L	4401–4405		BTH1121
F	4401–4404		VTF1080
K	4401,4402		AKX1061
⚠U	4401		AXF116
⚠U	4402		AXF117

Mark	No.	Description	Part No.
		RESISTORS	
	R	4407,4429	RS1/16SS1002F
		Other Resistors	RS1/16SS###J
		CAPACITORS	
	C	4401,4406	CKSRYF104Z50
	C	4403,4410	CCSRCH821J50
	C	4404,4409	CKSQYB105K16
	C	4405	CKSRYB224K16
	C	4408	CCSRCH331J50
	C	4411,4412	CKSRYB334K10
	C	4413	CKSSYB102K50
	C	4414,4415	CCSSCH270J50
	C	4416,4417	CCSSCH221J50
	C	4421	CKSSYB223K16
	C	4422,4423,4425,4426	CEHVKW101M6R3
	C	4427	CEHVKW220M16
	C	4428	CKSSYB333K16
	C	4429–4431,4448–4450	CKSSYB104K10
	C	4432,4443	DCH1201
	C	4433,4454	CEHVKW101M6R3
	C	4435,4437,4439	CKSSYF104Z16
	C	4438,4444,4446,4451	CCG1205
	C	4447	ACG1122
	C	4452	ACH1417
	C	4453	ACH1418
	C	4455	CKSSYB104K10
	C	4456	CKSRYB102K50
	C	4457	CCSSCH120J50
	C	4458	CCSSCH101J50
	C	4459	CEHVKW221M10
		[AV SW BLOCK(U)]	
		SEMICONDUCTORS	
	IC	4701	R2S11002AFT
	IC	4702,4704	NJM12904V
	IC	4703	TC4052BFT
	Q	4701–4703,4706,4707	2SA1586
	Q	4708	HN1A01FU
	Q	4709,4711,4714	UMD2N
	Q	4712,4713,4722	2SC4116
	Q	4716	HN1C01FU
	Q	4719–4721	2SA1586
	Q	4723–4725	2SC5233
	D	4701–4703,4706	1SS301
	D	4705	1SS355
		RESISTORS	
	R	4704	RS1/16S1001F
	R	4705	RS1/16S2700F
	R	4724,4725	RS1/16S5600F
	R	4728,4731	RS1/16S1800F
	R	4770,4771	RS1/16S681J
	R	4772,4774,4778,4779	RS1/16S102J
	R	4783,4787,4795,4796	RS1/16S182J
	R	4793,4814,4815	RS1/16S821J
	R	4794,4811,4813	RS1/16S221J
	R	4804,4806,4807,4817	RS1/16S182J
	R	4818	RS1/16S182J

Mark	No.	Description	Part No.
		Other Resistors	RS1/16SS###J
		CAPACITORS	
	C	4701,4702,4704–4716	CKSRYB105K10
	C	4717,4720	CCSRCH181J50
	C	4718,4721	CCSRCH681J50
	C	4719,4724,4725,4728	CKSRYB105K10
	C	4723,4726,4729-4731	CKSSYB104K10
	C	4727,4732,4734	DCH1201
	C	4735	ACG1122
	C	4736,4740–4742,4746	CKSRYB104K16
	C	4738,4739,4743,4744	CCG1205
	C	4745	DCH1165
	C	4747–4749,4751,4752	DCH1201
	C	4750	CCSRCH331J50
	C	4753	CKSSYB473K16
	C	4754	CKSRYB224K10
	C	4757,4760,4761	DCH1201
	C	4758,4759	CKSSYF104Z16
	C	4762,4763	CCG1205
	C	4768	ACH1454
	C	4770	CKSRYB105K10
		[RGB SW BLOCK(U)]	
		SEMICONDUCTORS	
	IC	4901	R2S11001FT
	Q	4901–4904	2SA1586
		RESISTORS	
	R	4914	RAB4CQ102J
	R	4932	RS1/16S5600F
	R	4934	RS1/16S1800F
	R	4935,4938	RS1/16S821J
	R	4942	RS1/16S102J
		Other Resistors	RS1/16SS###J
		CAPACITORS	
	C	4901–4903,4911,4916	CKSRYB105K10
	C	4904–4906,4909,4910	CKSSYB104K10
	C	4907,4908	CCSSCH680J50
	C	4912–4915,4917–4919	CKSSYB103K16
	C	4920	CKSRYB105K10
	C	4921–4927	CKSSYB103K16
	C	4932,4933	DCH1201
		[VDEC BLOCK(U)]	
		SEMICONDUCTORS	
	IC	5101	UPD64015AGM-UEU
	IC	5102	EDS1616AGTA-75-E
		MISCELLANEOUS	
	L	5101–5103	BTX1042
	X	5102	ASS1191
		RESISTORS	
	R	5101–5103,5138	ACN1246
	R	5104,5105	BCN1067
	R	5106-5108	RS1/16S0R0J

Mark	No.	Description	Part No.
R	5114		RS1/16SS6200D
R	5120,5123,5124		RS1/16SS2000F
R	5127		RS1/16S334J
R	5133		RAB4CQ220J
R	5137		RS1/10S0R0J
	Other Resistors		RS1/16SS###J
CAPACITORS			
C	5101–5105		CKSSYB103K16
C	5106,5107		CCSSCH8R0D50
C	5108		CKSSYB102K50
C	5109,5110,5154,5155		DCH1201
C	5114–5124,5127–5129		CKSSYB104K10
C	5134,5135,5156–5165		CKSSYB104K10
C	5167–5170,5172–5174		CKSSYB104K10
C	5177–5180		CKSSYB104K10
[ADC BLOCK(U)]			
SEMICONDUCTORS			
IC	5301		AD9985KSTZ-110
RESISTORS			
R	5301–5303		BCN1067
R	5304,5306–5308		RS1/16SS470J
R	5305		RS1/16SS2701F
R	5310,5311		RS1/10S0R0J
	Other Resistors		RS1/16S###J
CAPACITORS			
C	5301		CKSSYB823K10
C	5302		CKSSYB822K16
C	5303–5305		CKSSYB473K16
C	5307–5316,5318,5319		CKSSYB104K10
[HDMI BLOCK(U)]			
SEMICONDUCTORS			
IC	5401		SII9023CTU
IC	5402		PCM1754DBQ
IC	5403,5404		BR24L02FJ-W
Q	5401,5402		HN1K02FU
Q	5407,5408		UMD2N
Q	5413,5414		RN1902
D	5401,5402		1SS301
D	5407,5408		UDZS6R8(B)
MISCELLANEOUS			
JA	5401,5402		AKP1278
X	5401		ASS1192
RESISTORS			
R	5401–5403		BCN1071
R	5415		RS1/10S0R0J
R	5450		RAB4CQ473J
R	5451		RAB4CQ100J
R	5452,5455		RAB4CQ103J
R	5454		RAB4CQ470J
	Other Resistors		RS1/16SS###J

Mark	No.	Description	Part No.
CAPACITORS			
C	5401,5402		CCSSCH120J50
C	5403,5404,5407–5412		CKSSYB104K10
C	5405,5452,5473		DCH1201
C	5406,5453		CCSSCH101J50
C	5416,5419–5446		CKSSYB104K10
[CCD BLOCK(U)]			
SEMICONDUCTORS			
IC	4601		PEG150A
IC	4602,4603		NJM2561F1
Q	4601,4602		2SA1586
MISCELLANEOUS			
X	4601		ASS1159
RESISTORS			
R	4603,4648–4661,4666		RAB4CQ473J
R	4664		RAB4CQ102J
R	4667		RAB4CQ473J
	Other Resistors		RS1/16SS###J
CAPACITORS			
C	4601–4605,4608,4609		CKSSYB104K10
C	4606,4607		CCG1205
C	4612,4613		CKSSYB102K50
C	4614,4615		CCSSCH221J50
C	4616		CCSSCK2R0C50
C	4617		CKSSYB153K16
C	4618,4619		DCH1201
C	4620,4621		CCSRCH331J50
C	4622,4623		CCSRCH5R0C50
C	4627,4630,4631		CKSSYB104K10
[DTUNER BLOCK(U)]			
SEMICONDUCTORS			
IC	6001		MCP3021A5-I/OTG
IC	6002,6003		UPC3219GV
IC	6004,6005		MM1565AF
Q	6001		DTC124EUA
Q	6002		2SC4116
Q	6003–6005		2SC5084
Q	6006		BB504CDS
D	6001–6003		1SS355
D	6004		UDZS30(B)
MISCELLANEOUS			
L	6001,6002		BTH1121
L	6003		LCTAW1R5J2520
L	6004		LCYA10NJ2520
L	6006		LCYAR82J2520
F	6001		BTF1130
F	6002–6006		VTF1084
F	6007		ATF1219
F	6008,6009		VTF1080
⚠U	6001		AXF116
RESISTORS			
R	6011		RS1/16SS6801F
R	6023		RS1/16SS2201F

Mark	No.	Description	Part No.
R	6024		RS1/16SS4703F
R	6025		RS1/16SS1502F
R	6026		RS1/16SS6802F
R	6027		RS1/16SS5602F
R	6028		RS1/16SS4701F
R	6041		RS1/16SS1001F
Other Resistors			RS1/16SS###J

CAPACITORS

C	6001		ACH1442
C	6004,6005,6008		CKSSYB104K10
C	6006		CKSQYB225K10
C	6007,6043		BCG1064
C	6009,6010		CKSSYB471K50
C	6011,6012,6014–6017		CKSSYB103K16
C	6013		CCSSCK2R0C50
C	6019,6022–6031,6034		CKSSYB103K16
C	6032,6033		CKSSYB102K50
C	6035		CKSSYB103K16
C	6036		CEHVKW101M6R3
C	6038,6040		CKSQYB105K16
C	6039,6041,6042		DCH1201

[QPSK BLOCK(U)]

SEMICONDUCTORS

IC	6101		UPC3220GR

MISCELLANEOUS

L	6101		LCTAW1R5J2520
L	6102		LCYA56NJ2520
L	6103,6104		LCYA68NJ2520
L	6105,6106		LCYA82NJ2520
L	6107		LCYAR10J2520
F	6101		ATF1215
F	6102		VTF1084

RESISTORS

All Resistors			RS1/16SS###J

CAPACITORS

C	6101,6103,6105		CCSSCH270J50
C	6102		CCSSCH100D50
C	6104		CCSSCH120J50
C	6106		CCSSCH560J50
C	6107		CKSSYB271K50
C	6108,6109,6115–6120		CKSSYB103K16
C	6110,6112,6114,6121		CKSSYB102K50
C	6111,6113		CCSSCH390J50
C	6123		CKSSYB102K50
C	6124–6126		CCSSCH101J50

[F/E IC BLOCK(U)]

SEMICONDUCTORS

IC	6201		BCM3517KQLGB0

MISCELLANEOUS

L	6201		BTX1042
L	6202		LCTAW1R8J2520
F	6201–6205		VTF1084
X	6201		BSS1134

RESISTORS

R	6211,6213		RS1/16S3010F
R	6237		RAB4CQ101J
R	6238,6240		RAB4CQ330J
Other Resistors			RS1/16SS###J

CAPACITORS

C	6201,6203,6206,6208		DCH1201
C	6202,6204,6205		BCG1059
C	6209–6219,6222–6232		CKSSYB103K16
C	6220,6221,6233		CCSSCH120J50
C	6234		CCSSCH150J50
C	6235–6237,6240–6252		CKSSYB103K16
C	6239		CKSSYB102K50
C	6253,6254,6256		CKSSYB104K10

[7038_0 BLOCK(U)]

SEMICONDUCTORS

IC	6301		BCM7038KPB1G-B2

MISCELLANEOUS

F	6301–6310		VTF1084
F	6312		ATX1058

RESISTORS

R	6302,6346		RAB4CQ472J
R	6303–6305,6308–6310		BCN1072
R	6313		RAB4CQ102J
R	6336		RAB4CQ101J
Other Resistors			RS1/16SS###J

CAPACITORS

C	6301		ACH1442
C	6302–6306		BCG1059
C	6307–6320		CKSSYB103K16
C	6321		ACH1421
C	6322–6357,6361,6364		CKSSYB104K10
C	6360,6362,6365,6366		CKSSYB102K50
C	6367,6368		CKSSYB104K10
C	6369		DCH1201

[7038_1 BLOCK(U)]

SEMICONDUCTORS

Q	6401		RN1901

MISCELLANEOUS

F	6401–6412		VTF1084

RESISTORS

R	6401		RS1/16SS1002F
R	6402,6404		RS1/16SS1101F
R	6405–6407,6410–6412		RS1/16SS75R0F
R	6420		RAB4CQ102J
R	6444		BCN1071
R	6445		BCN1067
Other Resistors			RS1/16SS###J

Mark	No.	Description	Part No.
CAPACITORS			
C	6401		DCH1201
C	6402		CCSSCH150J50
C	6403–6414		CKSSYB103K16
C	6416–6428		CKSSYB104K10
[7038 DDR BLOCK(U)]			
SEMICONDUCTORS			
IC	6601		LP2995M
IC	6602–6605		EDD2516AKTA-6B
MISCELLANEOUS			
L	6601		BTX1039
CAPACITORS			
C	6602,6607–6611		CKSSYB103K16
C	6603–6606		CKSSYB104K10
C	6612,6620,6633,6642		CKSSYB471K50
C	6613–6619,6621,6622		CKSSYB103K16
C	6624,6625,6627–6632		CKSSYB103K16
C	6634–6641,6643,6645		CKSSYB103K16
C	6648		CEHVKW331M6R3
C	6649–6651		BCG1059
[DDR REG BLOCK(U)]			
RESISTORS			
R	6783,6788-6790,6795		RAB4CQ101J
R	6784–6787,6791–6794		RAB4CQ220J
R	6796,6801,6802,6816		RAB4CQ101J
R	6797–6800,6803–6806		RAB4CQ220J
R	6807–6809,6811,6839		RAB4CQ510J
R	6810,6812–6815		RAB4CQ220J
R	6817–6820,6824–6827		RAB4CQ220J
R	6821–6823,6828,6829		RAB4CQ101J
R	6830–6833,6836–6838		RAB4CQ220J
R	6834,6835		RAB4CQ101J
R	6840		RAB4CQ220J
Other Resistors			RS1/16SS###J
CAPACITORS			
C	6704-6711		CKSSYB103K16
C	6801-6803		DCH1201
[7038 FLASH BLOCK(U)]			
SEMICONDUCTORS			
IC	6901		TC7WH02FU
IC	6902		AGC1008
IC	6903		BR24L64F-W
Q	6901		2SA1586
Q	6902		UMD2N
Q	6903		2SC4116
D	6902,6903		UDZS4R7(B)
MISCELLANEOUS			
L	6901		LCTAW2R2J2520
F	6901-6904		CTF1557
JA	6901		AKN1073
X	6901		BSS1134
CN	6901		BKP1159
RESISTORS			
R	6912,6913		RS1/16S3010F
R	6952		RAB4CQ472J

Mark	No.	Description	Part No.
Other Resistors			RS1/16SS###J
CAPACITORS			
C	6901		DCH1201
C	6902-6908		CCSSCH101J50
C	6909		CKSRYB105K10
C	6911,6916		CCSSCH8R0D50
C	6912,6913		CCSSCH120J50
C	6915,6919		CKSSYB103K16
C	6917,6923,6924		CKSSYB104K10
[DT VDEC BLOCK(U)]			
SEMICONDUCTORS			
IC	7001		TVP5160PNP
IC	7002		EDS1616AGTA-75-E
Q	7004		2SC4116
MISCELLANEOUS			
F	7001–7006		VTF1084
F	7007		ATX1058
X	7001		BSS1119
RESISTORS			
R	7001–7003,7009		RAB4CQ101J
R	7004,7005		BCN1072
R	7010–7013		RAB4CQ510J
R	7014		BCN1071
Other Resistors			RS1/16SS###J
CAPACITORS			
C	7001–7003,7005		DCH1201
C	7006		CKSSYB102K50
C	7014,7015		CCSSCH100D50
C	7016–7054		CKSSYB104K10
[DT AV BLOCK(U)]			
SEMICONDUCTORS			
IC	7101		PCM1803DB
IC	7102,7104,7107		NJM2068V
IC	7103,7106		NJM2746V
IC	7105		R5520H001B
MISCELLANEOUS			
L	7101,7102		BTH1107
L	7103,7104		BTX1042
L	7106		ATH1160
F	7101–7103		VTF1084
JA	7101		VKS1001
CN	7101		AKM1276
RESISTORS			
R	7103,7119		RS1/16SS2402F
R	7104,7118		RS1/16SS1002F
R	7107,7109		RAB4CQ103J
R	7110		RAB4CQ101J
R	7144,7145,7151,7152		RS1/16SS3302F
R	7155,7156,7195,7196		RS1/16SS3302F
Other Resistors			RS1/16SS###J
CAPACITORS			
C	7102,7165,7174,7177		DCH1165
C	7103,7109,7110		DCH1201
C	7107,7108		CKSRYB105K10
C	7111-7114		CCSRCH331J50
C	7115,7117,7119,7120		CKSSYB103K16

Mark	No.	Description	Part No.
C	7116,7118		CKSSYB271K50
C	7122-7124,7130		CCSSCH220J50
C	7125,7131,7148,7154		CKSSYB391K50
C	7127,7128,7150,7151		CCSSCH560J50
C	7132,7133,7155,7156		CKSSYB103K16
C	7135		ACH1421
C	7136,7138,7166,7167		CKSSYB104K10
C	7139,7140,7162,7163		CKSSYB821K50
C	7145-7147,7153		CCSSCH220J50
C	7171-7173		CKSSYB104K10

[DT D_VIDEO BLOCK(U)]

SEMICONDUCTORS

IC	7201		PE5436A

MISCELLANEOUS

L	7201		BTX1042

RESISTORS

R	7202,7207,7208,7211		RAB4CQ0R0J
R	7212,7215		RAB4CQ472J
R	7214,7249		BCN1067
R	7248		RAB4CQ470J
R	7251		RAB4CQ101J
	Other Resistors		RS1/16SS###J

CAPACITORS

C	7201-7206		CKSSYB104K10
C	7208,7209,7211-7214		CKSSYB102K50
C	7210		CKSSYB471K50
C	7220		DCH1201

[POD BLOCK(U)]

SEMICONDUCTORS

IC	7301		TC74LCX245FTS1
IC	7302		CIMAXSP2L
IC	7303		TC74LCX257FT
IC	7304		TC74LCX244FTS1
IC	7305,7306		TC74LCX373FT

MISCELLANEOUS

F	7301,7302		ATX1058
F	7303		VTF1084
CN	7301,7302		AKM1354

RESISTORS

R	7305,7317,7333-7335		RAB4CQ470J
R	7323,7339,7342		BCN1067
R	7336,7338,7343		RAB4CQ103J
R	7337,7341		RAB4CQ470J
R	7340		RAB4CQ0R0J
R	7344-7346		BCN1067
	Other Resistors		RS1/16SS###J

CAPACITORS

C	7301-7303,7305		CKSSYB102K50
C	7304		CCSSCH680J50
C	7306-7315,7319,7320		CKSSYB104K10
C	7321-7323		CKSSYB102K50

[POWER_1 BLOCK(U)]

SEMICONDUCTORS

IC	7401		NJM2370U09
IC	7402		NJM2871BF05
IC	7403		MM1563DF
IC	7405,7406,7408		NJM2846DL3-33
IC	7407		NJM2846DL3-18
D	7402-7408		1SS355

MISCELLANEOUS

L	7401,7403		BTX1042
F	7401		VTF1084

RESISTORS

R	7401,7407		RS1/10S0R0J
	Other Resistors		RS1/16SS###J

CAPACITORS

C	7401,7403,7406-7408		CKSSYB104K10
C	7405		CKSRYB104K16
C	7409		CKSQYB225K10
C	7412		CKSSYB103K16
C	7413		CKSSYB471K50
C	7415		CEHVKW470M16
C	7416		CEHVKW220M16
C	7417-7420,7423,7424		DCH1201
C	7421		BCG1060
C	7422,7426,7428		CKSRYB105K10
C	7427		BCG1059
C	7429		DCH1201

[POWER_2 BLOCK(U)]

SEMICONDUCTORS

IC	7501		PQ200WNA1ZPH
IC	7502–7505		R1224N102H
IC	7506		PST3628UR
Q	7501,7502		2SA1586
Q	7503–7506		CPH6311
Q	7507		DTC124EUA
Q	7508–7510		RN1901
D	7501–7504		D1FM3
D	7505		1SS355

MISCELLANEOUS

L	7501,7504		ATH1161
L	7502,7503		ATH1192
L	7505,7506		BTX1042

RESISTORS

R	7502-7504		RS1/4S1R5J
R	7505,7506		RS1/4S3R3J
R	7507,7508		RS1/10S271J
R	7511,7538		RS1/16SS2202F
R	7530		RS1/16SS5102F
R	7531		RS1/16SS8201F
R	7532		RS1/16SS9101F
R	7533		RS1/16SS2402F
R	7539		RS1/16SS3302F
R	7550,7565		RS1/16SS5602F
R	7551,7566		RS1/16SS1202F
	Other Resistors		RS1/16SS###J

CAPACITORS

C	7501,7502		ACH1442
C	7503		CKSSYB104K10
C	7504,7508,7513		CKSSYB103K16
C	7506,7507		CKSSYB102K50
C	7509		CKSSYB332K50

Mark	No.	Description	Part No.
C	7511,7512,7517,7519		CKSRYB105K10
C	7514,7516		CEHVKW101M6R3
C	7518,7520,7521,7524		DCH1201
C	7522,7523,7525,7528		CKSRYB105K10
C	7526,7527,7529,7530		DCH1201

[DSEL BLOCK(U)]

SEMICONDUCTORS

IC	8001		PD6523A
IC	8002		TC74LCX125FT
IC	8003		TC74VCX574FT

MISCELLANEOUS

L	8001,8002		BTX1042
F	8001,8002		VTF1080
⚠F	8004		ATX105
X	8001		ASS1194
8001		HEAT SINK B	ANH1645
8002		THERMAL SHEET B	AEB1417
⚠8003		ANTENNA CABLE 50MM	ADE1196

RESISTORS

R	8001–8003		ACN1251
R	8004–8006		BCN1071
R	8026,8027		RAB4CQ101J
Other Resistors			RS1/16SS###J

CAPACITORS

C	8001		CCSRCH221J50
C	8002		CKSSYB102K50
C	8003,8006–8013		CCSSCH221J50
C	8004		CKSSYF104Z16
C	8005,8014–8025,8027		CKSSYB104K10
C	8026,8028–8030		DCH1201

[IP BLOCK(U)]

SEMICONDUCTORS

IC	8101		PE5504B
IC	8102,8103		EDS6432AFTA-75-E

MISCELLANEOUS

L	8101-8104		BTX1042
F	8101		ATX1058

RESISTORS

R	8101-8104,8106-8110		BCN1067
R	8105		BCN1071
R	8111,8116		ACN1246
R	8112-8115,8117		ACN1251
R	8123		RAB4CQ103J
R	8135		RAB4CQ470J
R	8136		RAB4CQ101J
Other Resistors			RS1/16SS###J

CAPACITORS

C	8101		CKSSYB102K50
C	8102,8126		DCH1201
C	8103-8106,8108-8111		CCSSCH221J50
C	8107,8112-8120		CKSSYB104K10
C	8121-8125,8127-8129		CCSSCH221J50
C	8134-8147		CKSSYB104K10

[MULTI BLOCK(U)]

Mark	No.	Description	Part No.

SEMICONDUCTORS

IC	8201		PEG121B
IC	8202		AGC1007
IC	8203		TC74VHC08FTS1

MISCELLANEOUS

L	8201-8204		BTX1042

RESISTORS

R	8201-8205		ACN1246
R	8206-8208,8255		ACN1251
R	8214,8215,8248		RAB4CQ103J
R	8225,8245		BCN1071
R	8246		BCN1073
R	8249		RAB4CQ680J
R	8250		RS1/10S0R0J
Other Resistors			RS1/16SS###J

CAPACITORS

C	8202		CKSSYB102K50
C	8203-8206,8221-8234		CKSSYB104K10
C	8207,8240-8242		DCH1201
C	8208-8220		CCSSCH221J50
C	8235		BCG1059
C	8239		CKSSYB104K10

[IF UCOM BLOCK(U)]

SEMICONDUCTORS

IC	8301		AGC1016
IC	8302		PST9230N
IC	8303		TC74VHC08FTS1
IC	8304		TC7W126FU
IC	8305		TC74VHC00FTS1
IC	8306		MAX3232CPW
IC	8307		TC74VHC125FTS1
Q	8303-8305		DTC124EUA
Q	8306,8307		2SA1586
D	8301-8304		1SS355

MISCELLANEOUS

X	8301		ASS1168
X	8302		ASS1172
CN	8301		AKP1213

RESISTORS

R	8322		RAB4CQ473J
R	8348-8352		RAB4CQ103J
Other Resistors			RS1/16SS###J

CAPACITORS

C	8301		CKSSYB472K25
C	8302,8303		CCSSCH220J50
C	8305,8321		CKSSYB471K50
C	8306-8311,8314-8320		CKSSYB104K10
C	8312,8313		DCH1201

[MAIN UCOM BLOCK(U)]

SEMICONDUCTORS

IC	8401		MB91305PMC-G-BND
IC	8402		AGC1006
IC	8403		PST3628UR
IC	8407		PQ200WNA1ZPH
IC	8409		BR24L64F-W
IC	8410,8411		TC74VHC125FTS1

Mark	No.	Description	Part No.
Q	8401		2SJ461A
Q	8402		DTC124EUA
Q	8403,8404		HN1K02FU
D	8401		1SS355
D	8402		SML-311UT

MISCELLANEOUS

K	8401,8402		AKX9002
X	8401		CSS1616
CN	8401		AKM1353

RESISTORS

R	8401,8402		ACN1248
R	8411,8466,8467		RAB4CQ101J
R	8447		RS1/16SS5602F
R	8457,8458		RS1/16S0R0J
R	8463		RS1/16SS1502F
R	8464		RS1/16SS4701F
R	8465		RS1/16SS3301F
R	8481		RS1/16SS2002F
Other Resistors			RS1/16SS###J

CAPACITORS

C	8402–8413		CCSSCH470J50
C	8414,8415,8418,8419		CKSSYB102K50
C	8417		CCSSCH221J50
C	8420		CKSSYB472K25
C	8421,8425		CKSSYB103K16
C	8427,8462		DCH1165
C	8430–8437,8439–8445		CKSSYB104K10
C	8452–8461,8463		CKSSYB104K10

TANSHI ASSY(U BB)

SEMICONDUCTORS

Q	8901		HN1B04FU
D	8808–8810		1SS302
D	8821		UDZS5R1(B)
TH	8901		TH05-3H103F

MISCELLANEOUS

F	8801–8807,8821–8823		CTF1557
JA	8801		AKB1338
JA	8803,8805		AKB1331
JA	8806		VKN1449
JA	8807		AKB1334
JA	8808,8809		AKB1332
JA	8811		AKN1081
CN	8802		AKM1349
CN	8803		AKM1348

RESISTORS

R	8801,8802		RS1/10S151J
R	8811-8816,8850,8860		RS1/16S75R0F
R	8861,8874-8876		RS1/16S75R0F
R	8880-8882,8898		RS1/16S75R0F
R	8901		RS1/16S4701F
R	8911		RS1/16S102J
Other Resistors			RS1/16SS###J

CAPACITORS

C	8801–8806,8810–8812		CKSRYB105K10
C	8809,8902		CKSSYF104Z16
C	8815		DCH1201
C	8818,8819		CKSSYB473K16
C	8820–8826,8901		CKSSYB103K16
C	8832,8833,8843–8857		CKSRYB105K10
C	8858		ACH1454
C	8861–8864		CKSSYB471K50

POD ASSY(U)

SEMICONDUCTORS

IC	9001		BR24C21FJ
IC	9002		TC74VHC08FTS1
IC	9003		TC7WH123FU
Q	9005		UMD2N
D	9001,9002,9007,9008		UDZS5R6(B)
D	9003,9009		1SS301

MISCELLANEOUS

JA	9001	PC CARD CONNECTOR	AKP1305
CN	9001,9002	40P CONNECTOR	AKM1348
CN	9003	CONNECTOR	CKS3826
CN	9004	15P DSUB SOCKET	AKP1214

RESISTORS

R	9008,9016–9020		RAB4CQ0R0J
R	9022–9026		RAB4CQ0R0J
Other Resistors			RS1/16SS###J

CAPACITORS

C	9001,9017-9020,9200		DCH1201
C	9002,9014,9015		CKSSYF104Z16
C	9012,9013		CCSRCH220J50
C	9016		CKSRYB105K10
C	9201		DCH1201

SIDE ASSY(U BB)

SEMICONDUCTORS

D	9105,9106		UDZS9R1(B)

MISCELLANEOUS

JA	9101	PIN JACK 3P	AKB1303
JA	9102	PIN JACK 3P	AKB1305
9102,9103		SCREW TERMINAL	VNE1949

RESISTORS

All Resistors			RS1/16SS###J

CAPACITORS

C	9105,9106		CKSRYB105K10
C	9114		CKSSYF104Z16

AUDIO ASSY

SEMICONDUCTORS

IC	3751		LA4625

Mark	No.	Description	Part No.
IC	3752		PQ120DNA1ZPH
IC	3753		NJW1183GK1
Q	3751,3754,3755,3757		2SA1586
Q	3756,3759		2SC4116
Q	3758,3760		DTC124EUA
D	3751		1SS355

MISCELLANEOUS

KN	3751,3752	WRAPPING TERMINAL	VNF1084
CN	3751	CONNECTOR	B3P-VH
	3772,3773		PMB30P100FNI
	3774,3775		VBB30P100FNI

RESISTORS

R	3803	RD1/2MMF2R2J
	Other Resistors	RS1/16S###J

CAPACITORS

C	3752,3753	CEHAT2R2M50
C	3754,3805	CFTLA103J50
C	3755	CEHAT472M25
C	3757	CEHAT471M25
C	3758,3760,3796	CKSRYB103K50
C	3759	CEHAT331M16
C	3761,3764,3786,3798	CEHAT101M16
C	3762	CEHAT220M50
C	3763	CEHATR47M50
C	3766,3780,3783–3785	CEHAT1R0M50
C	3767,3770,3781,3782	CFTLA104J50
C	3769,3815	CKSRYB222K50
C	3771–3774,3787,3789	CKSRYB224K16
C	3775,3777,3788,3790	CEHAT100M50
C	3778	CFTLA334J50
C	3779	CKSRYB822K50
C	3791,3799	CEHAT100M50
C	3792–3795,3806,3807	CFTLA104J50
C	3797,3808,3812,3814	CEHAT1R0M50
C	3800,3801	CKSRYB224K16
C	3811	CFTLA223J50
C	3813	CFTLA104J50
C	3816,3817	ACH1456
C	3818–3821	CCSRCH221J50
C	3822–3825	CKSRYB682K50
C	3826–3829	CKSRYF104Z50
⚠C	3831,3833,3835,3837	CCSRCH101J50
C	3838,3839	CEHAT4R7M50

SP TERMINAL ASSY

MISCELLANEOUS

⚠F	3901,3902		ATF1224
JA	3901	SPEAKER TERMINAL	AKE1061

RESISTORS

⚠	All Resistors	RS1/16S###J

CAPACITORS

C	3903,3911,3917,3919	CKSRYB682K50
C	3904,3912,3918,3920	CKSRYF104Z50
⚠C	3905,3907,3913,3915	CCSRCH221J50
⚠C	3921–3924	CCSRCH221J50

SIDE KEY ASSY

MISCELLANEOUS

⚠L	9501–9504		QTL1013
S	9501–9507		CSG1155

RESISTORS

	All Resistors	RS1/16S###J

CAPACITORS

C	9501	CKSRYF104Z16
C	9502,9503	CCSRCH101J50

42 & 60 LED ASSY

SEMICONDUCTORS

D	9601	SML-521MDW
D	9602	TLRV1022
D	9603	SML512BC4T

MISCELLANEOUS

CN	9601	CONNECTOR	AKP1303

RESISTORS

	All Resistors	RS1/16S###J

CAPACITORS

C	9606,9610,9614	CKSSYF103Z50
C	9611	CKSRYF103Z50

60 IR ASSY

SEMICONDUCTORS

IC	9801	SBX3050-01
Q	9801	2SA1586
D	9801	1SS302

MISCELLANEOUS

CN	9801	CONNECTOR	AKP1303

RESISTORS

R	9801–9803	RS1/16S0R0J
	Other Resistors	RS1/16SS###J

CAPACITORS

C	9801	CKSSYB102K50
C	9802	CKSSYF104Z16
C	9803	ACG7046
	All Resistors	RS1/16S###J

Mark	No.	Description	Part No.

60 DIGITAL ASSY

[FRONT RX BLOCK]

MISCELLANEOUS

F	3001	EMI FILTER	CCG1162
KN	3001	GROUND PLATE	ANK1664
CN	3001	50P CONNECTOR PBF	AKM1353
CN	3002	20P FFC CONNECTOR	AKM1235

RESISTORS

R	3007,3010–3016	RAB4C470J
R	3020–3022	RAB4C103J
Other Resistors		RS1/16SS###J

[MODULE UCOM BLOCK]

SEMICONDUCTORS

IC	3152,3153	SN74AHC541PW
IC	3155	SN74AHC08PW
IC	3156	BR24L04FJ-W
IC	3157	M62334FP
IC	3158	MM1522XU
IC	3159	TC7W126FU
IC	3160,3161	TC74VHC123AFTS1
Q	3151	2SJ461A
D	3151,3152,3154,3155	DAN202U
D	3158,3159,3161-3163	1SS355

MISCELLANEOUS

X	3151		CSS1616
CN	3151	PH CONNECTOR 5P	AKM1276
CN	3152	CONNECTOR	CKS4828

RESISTORS

R	3155,3160,3170,3176	RAB4C101J
R	3174,3216	RAB4C103J
Other Resistors		RS1/16SS###J

CAPACITORS

C	3151	CEHVKW470M6R3
C	3152,3153,3155–3158	CKSSYB104K10
C	3159,3171,3172,3182	CKSRYB105K6R3
C	3160	CKSSYB102K50
C	3161–3163,3165,3166	CKSSYB104K10
C	3164	CCSSCH101J50
C	3167	CKSSYB103K16
C	3168,3170,3181	CKSSYB104K10

[PANEL FLASH BLOCK]

SEMICONDUCTORS

IC	3301	AGC1026
IC	3302,3305	PST3628UR
IC	3303	SN74AHC08PW
IC	3304	PST3610UR
Q	3301	RN1901
Q	3302	HN1C01FU

MISCELLANEOUS

X	3302 (102.5 MHz)		ASS1188
CN	3301	CONNECTOR	CKS4835

Mark	No.	Description	Part No.

RESISTORS

R	3307,3308	RAB4C101J
Other Resistors		RS1/16SS###J

CAPACITORS

C	3301–3303,3306,3308	CKSSYB104K10
C	3304,3307,3309	CKSSYB472K16
C	3305,3310	CKSSYB102K50
C	3311	CCSRCH470J50
C	3315,3316	CKSSYB104K10
C	3317	CCSRCH471J50

[ASTRA BLOCK]

SEMICONDUCTORS

IC	3401	PEG122C

MISCELLANEOUS

L	3401–3403	QTL1013
F	3401,3402	CCG1162

RESISTORS

R	3402,3412	RAB4C101J
R	3405–3407,3409,3410	RAB4C220J
R	3416,3417	RAB4C220J
R	3425	RS1/16SS5601F
Other Resistors		RS1/16SS###J

CAPACITORS

C	3402,3419,3425,3441	ACH1396
C	3403–3410,3412,3413	CKSSYB104K10
C	3414–3416,3426–3438	CKSRYB105K6R3
C	3417,3418,3420–3424	CKSSYB104K10
C	3439,3440,3442–3449	CKSSYB104K10

[ADDRESS BLOCK]

SEMICONDUCTORS

Q	3501,3502	DTC143EUA
Q	3503,3506	RN1901
D	3501–3504	DAN202U

MISCELLANEOUS

CN	3501–3510	40P CONNECTOR	AKM1348

RESISTORS

R	3518,3524,3538,3551	RAB4C101J
R	3519,3525	RAB4C472J
R	3539,3550	RAB4C222J
Other Resistors		RS1/16SS###J

CAPACITORS

C	3501–3512,3520–3523	CKSSYB102K50

[DIGITAL DD CON BLOCK]

MISCELLANEOUS

U	3601	DD CON UNIT	AXY1137

Mark	No.	Description	Part No.
RESISTORS			
	R	3611	RAB4C101J
	Other Resistors		RS1/16SS###J
CAPACITORS			
	C	3604-3606,3619	CKSSYB473K16
	C	3609	CKSSYB104K10
[THERMAL SENSOR BLOCK]			
CAPACITORS			
	C	3702	ACH1394

PANEL SENSOR ASS'Y

SEMICONDUCTORS			
	IC	3651	MM1522XU
	IC	3652	BR24L02FJ-W
	Q	3651	HN1B04FU
MISCELLANEOUS			
	CN	3651 PH CONNECTOR 6P	AKM1276
RESISTORS			
	All Resistors		RS1/16SS###J
CAPACITORS			
	C	3651,3653	CKSRYB105K6R3
	C	3652,3654	CKSSYB103K16
	C	3656,3657	CKSSYB104K10

60 X DRIVE ASSY

[X LOGIC BLOCK]			
SEMICONDUCTORS			
	IC	1001	TC74ACT541FT
	IC	1002	TC74ACT540FT
	IC	1003	TC74VHC00FTS1
	D	1001,1002	1SS355
MISCELLANEOUS			
	CN	1001 40P CONNECTOR	AKM1348
		1001	BMZ30P080FTC
		1001	ANH1639
		1002	AEH1092
RESISTORS			
	R	1001,1003,1009	RAB4C470J
	R	1005,1006,1011	RAB4C472J
	VR	1001,1002	CCP1390
	Other Resistors		RS1/16S###J
CAPACITORS			
	C	1001,1003	CEHAT470M16
	C	1002,1004,1005	CKSRYB104K16
	C	1006,1007	CCSRCH331J50
[X RESONANCE BLOCK]			

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC	1101,1104	TND307TD
	IC	1102	PS9117
	IC	1103,1131	AXF1159
	IC	1151	BA10393F
	Q	1101	2SC2412K
	Q	1102,1103,1131,1132	QSZ2
	Q	1151	2SC4081
	D	1101	UDZS5R6(B)
	D	1106,1135	D1FL40
	D	1112,1141	1SS302
MISCELLANEOUS			
	L	1101,1131	ATH1213
	L	1102,1132	ATH1215
RESISTORS			
	R	1109,1118,1132,1141	RS1/10S2R2J
	R	1112,1135	ACN1174
	R	1114,1117,1137,1140	RS3LMF100J
	R	1115,1116,1138,1139	RS1/10S104J
	R	1121	RS1/16S3300F
	R	1151,1154	RS1/10S1003F
	R	1152,1155	RS1/16S5601F
	R	1156,1157	RS1/16S6801F
	Other Resistors		RS1/16S###J
CAPACITORS			
	C	1101,1151,1153	CKSRYB104K16
	C	1102,1113,1131,1143	CEHAT470M25
	C	1103,1114	CKSRYF104Z50
	C	1104,1117,1132,1144	CKSYB105K25
	C	1106,1108,1135,1136	CCG1186
	C	1115,1116,1141,1142	ACG1112
	C	1118–1121,1156–1159	ACE1168
	C	1154	CKSSYB104K10
	C	1155	CKSRYB105K10
[X SUS BLOCK]			
SEMICONDUCTORS			
	IC	1201,1206	PS9117
	IC	1202,1207,1208,1210	TND307TD
	IC	1203,1205	AXF1160
	IC	1204	PQ05DZ11
	IC	1209	TC7SH04FUS1
	IC	1211	PQ09DZ11
	Q	1201	2SC2412K
	Q	1202,1205,1208,1209	QSZ2
	Q	1203	HN1B04FU
	Q	1204	DTC124EUA
	Q	1206	2SC4081
	Q	1207	R5009ANJ
	Q	1251	DTC143EK
	Q	1252	DTC123TKA
	D	1201,1205	UDZS5R6(B)
	D	1202,1203,1206,1210	CRH01
	D	1204,1211	1SS355
	D	1207	1SS302
	D	1208	UDZS5R1(B)
	D	1209	UDZS16(B)

Mark	No.	Description	Part No.
	D 1251		UDZS8R2(B)
	MISCELLANEOUS		
	L 1201–1203		BTH1134
	L 1204–1206		ATH1186
	F 1201		CTF1449
	K 1201		AKX1061
	KN1201–1207,1210–1217		ANK1841
	CN1201,1203	PH CONNECTOR 10P	AKM1281
	CN1204	PH CONNECTOR 6P	AKM1277
	CN1206	8P TOP POST	B8B-EH
	RESISTORS		
	R 1210,1226,1253,1254		RS1/10S100J
	R 1212		ACN1166
	R 1217,1232		RS1/10S0R0J
	R 1220,1237		ACN1168
	R 1222		RS3LMF180J
	Other Resistors		RS1/16S###J
	CAPACITORS		
	C 1201,1211–1213,1238		CKSRYF104Z50
	C 1202,1231,1237		CKSYB105K25
	C 1203,1204		ACH1449
	C 1207,1216,1218,1219		CKSRYB104K16
	C 1208,1214,1246		CEHAT470M16
	C 1209,1215,1217,1233		CEHAT470M25
	C 1210,1240,1244		CEHAT101M25
	C 1221,1222		ACG1126
	C 1223,1224		ACH1453
	C 1225–1230		ACE1180
	C 1232,1245,1250,1251		CKSRYB104K16
	C 1235		CEHAT2R2M2E
	C 1236		CKSRYB105K10
	C 1239		CCSRCH331J50
	C 1241–1243		CEHAT470M25
	C 1252		CKSRYB104K25
	[X DD CON BLOCK]		
	SEMICONDUCTORS		
	IC 1321		MIP2E3DMU
	IC 1322		PS2701A-1(L)
	IC 1327		TA76431FR
	Q 1301		2SD1898
	Q 1302		2SC4081
	Q 1331,1332		HN1C01FU
	D 1301,1324		D1FL40
	D 1302,1303,1325,1326		CRH01
	D 1304		1SS301
	D 1305		UDZS5R6(B)
	D 1306,1307,1331		1SS355
	D 1321,1322		CRF03
	D 1323		U1ZB330
	D 1332		UDZS6R2(B)
	D 1333		UDZS12(B)
	MISCELLANEOUS		
	T 1301		ATK1162
	T 1321		ATK1153

Mark	No.	Description	Part No.
	RESISTORS		
	R 1321,1322		RS1/10S2203F
	R 1328		RS1/16S5601F
	R 1331		RAB4C472J
	VR1321		CCP1392
	Other Resistors		RS1/16S###J
	CAPACITORS		
	C 1301,1306,1326		CEHAT101M25
	C 1302,1325		CKSYB105K25
	C 1303		CKSRYB103K50
	C 1304,1307,1323		CKSRYB104K16
	C 1305		ACG1105
	C 1321		ACH1361
	C 1322		ACH1452
	C 1324		CEHAT101M16
	C 1327		CKSRYB104K25
	C 1328		CEHAT221M25

60 Y DRIVE ASSY

[Y LOGIC BLOCK]

SEMICONDUCTORS

IC	2001,2007	TC74ACT541FT
IC	2003,2004	TC74ACT540FT
IC	2005,2006	TC74VHC08FTS1
D	2090,2091	1SS355

MISCELLANEOUS

K	2010,2014	AKX1061
CN	2001 40P CONNECTOR	AKM1348
2001		ANH1639
2002		BMZ30P080FTC
2003		AEH1092
2004		ANG2907
2005		ABA1364

RESISTORS

R	2001,2003,2016,2022	RAB4C470J
R	2002,2004	RAB4C101J
R	2005,2006,2017,2026	RAB4C472J
R	2023	RAB4C470J
R	2027	RAB4C472J
VR	2010,2011	CCP1390
Other Resistors		RS1/16S###J

CAPACITORS

C	2001,2009	CEHAT470M16
C	2002,2004–2008	CKSRYB104K16
C	2010,2011	CCSRCH331J50

[Y RESONANCE BLOCK]

SEMICONDUCTORS

IC	2101,2104	TND307TD
IC	2102	PS9117
IC	2103,2151	AXF1159
IC	2181	BA10393F
Q	2101	2SC2412K

Mark	No.	Description	Part No.
Q	2102,2103,2151,2152		QSZ2
Q	2181		2SC4081
D	2101		UDZS5R6(B)
D	2105,2154		D1FL40
D	2110,2159		1SS302

MISCELLANEOUS

L	2101,2151		ATH1213
L	2102,2152		ATH1215

RESISTORS

R	2109,2118,2152,2161		RS1/10S2R2J
R	2113,2156		ACN1174
R	2114,2115,2157,2158		RS3LMF100J
R	2116,2117,2159,2160		RS1/10S104J
R	2121		RS1/16S3300F
R	2181,2184		RS1/10S1003F
R	2182,2185		RS1/16S5601F
R	2186,2187		RS1/16S6801F
Other Resistors			RS1/16S###J

CAPACITORS

C	2101,2181–2184		CKSRYB104K16
C	2102,2113,2162,2164		CEHAT470M25
C	2103,2114		CKSRYF104Z50
C	2104,2117,2151,2163		CKSYB105K25
C	2107,2108,2154,2155		CCG1186
C	2115,2116,2160,2161		ACG1112
C	2118–2121,2186–2189		ACE1168
C	2185		CKSRYB105K10

[Y SUS BLOCK]
SEMICONDUCTORS

IC	2202,2221,2232,2242		PS9117
IC	2203,2211,2222,2231		TND307TD
IC	2241,2252		TND307TD
IC	2251		TC7SH04FUS1
IC	2271		TND301S
IC	2301,2302		AXF1161
IC	2351		PQ05DZ11
IC	2380		PQ09DZ11
Q	2211		2SK3325
Q	2221,2232,2242,2243		QSZ2
Q	2222,2231,2241,2352		2SC4081
Q	2239,2271		2SK3050
Q	2240		2SC2412K
Q	2251		QSZ2
Q	2281-2283		2SK3399
Q	2290		DTC123TKA
Q	2291		DTC143EK
Q	2351		HN1B04FU
D	2208,2221,2231,2241		UDZS5R6(B)
D	2222,2223,2232,2233		CRH01
D	2242,2243,2281,2282		CRH01
D	2251		UDZS5R1(B)
D	2271		1SS301
D	2272		UDZS16(B)
D	2283,2289		UDZS9R1(B)
D	2290		UDZS8R2(B)
D	2351,2380		1SS355

Mark	No.	Description	Part No.

MISCELLANEOUS

L	2351,2353,2354		BTH1134
L	2352,2355,2356		ATH1186
F	2301–2330		ATX1062
F	2351		CTF1449
K	2301,2351		AKX1061
KN	2202–2208,2301–2307		ANK1841
CN	2351	9P TOP POST	B9B-EH
CN	2353	PH CONNECTOR 6P	AKM1277
CN	2354,2356	PH CONNECTOR 10P	AKM1281

RESISTORS

R	2202,2206		RS3LMF102J
R	2211,2214,2215		RS3LMF5R6J
R	2274,2275		RS3LMF561J
R	2287–2293		ACN1239
R	2301,2303,2307,2308		RS1/10S100J
R	2302,2304		RS1/10S0R0J
R	2305,2311		ACN1168
R	2351		ACN1162
Other Resistors			RS1/16S###J

CAPACITORS

C	2211,2223,2233,2243		CEHAT470M25
C	2212,2272		CKSRYF104Z50
C	2221,2231,2241,2253		CKSYB105K25
C	2222,2232,2242,2290		CKSRYB104K16
C	2251		CCSRCH331J50
C	2252,2362		CKSRYB105K10
C	2256,2271,2291,2352		CEHAT470M25
C	2273,2281		CEHAT2R2M2E
C	2284,2286		ACE1163
C	2292		CKSYB105K25
C	2299		CKSRYB104K25
C	2301,2305		ACH1453
C	2302–2304,2306–2308		ACE1180
C	2309,2310		CCG1186
C	2351,2353,2361,2363		CEHAT470M16
C	2354,2359,2364,2380		CKSRYB104K16
C	2356,2357		ACH1449
C	2358		CEHAT101M10
C	2360		CKSRYB473K16
C	2367,2368		CEHAT101M25
C	2369		CEHAT470M16
C	2381		CKSRYB104K16

[Y SCAN BLOCK]
SEMICONDUCTORS

IC	2401,2403,2409		TLP116
IC	2402,2407,2421,2490		TC74AC540FT
IC	2405,2406,2408,2410		PS9117
IC	2481,2482		PST3638UR

MISCELLANEOUS

L	2401		BTH1136
L	2402,2403		BTH1134
F	2401,2402		ATX1062
CN	2401,2402	15P CONNECTOR	AKM1200

Mark	No.	Description	Part No.
		RESISTORS	
	R	2405,2417	RAB4C220J
A		Other Resistors	RS1/16S###J
		CAPACITORS	
	C	2401,2407,2414	CEHAT101M10
	C	2402,2403,2405	CKSRYB104K16
	C	2404,2411	ACH1413
	C	2408–2410,2412,2413	CKSRYB104K16
	C	2415,2420,2421	CKSRYB104K16
	C	2481,2482	CKSRYB102K50
B		**[Y VH DD CON BLOCK]**	
		SEMICONDUCTORS	
	IC	2501,2551	MIP2E3DMU
	IC	2502,2552	PS2701A-1(L)
	IC	2508,2557	TA76431FR
	IC	2553	BA10358F
	Q	2501	HN1C01FU
	Q	2551	2SC2412K
	D	2501	U1ZB330
	D	2502	D1FL40
	D	2503,2505,2555,2556	CRH01
C	D	2504,2551,2552,2554	CRF03
	D	2506,2559	UDZS4R7(B)
	D	2507	UDZS12(B)
	D	2558	1SS355
		MISCELLANEOUS	
	T	2501	ATK1158
	T	2551	ATK1153
		RESISTORS	
D	R	2509	RAB4C472J
	R	2551,2554	RS1/10S2203F
	R	2552	RS1/10S1803F
	R	2557,2560	RS1/16S5601F
	R	2564	RS1/16S1002F
	R	2565	RS1/16S2202F
	R	2566	RS1/16S2702F
	R	2567	RS1/16S6801F
	R	2568–2570	RS1/10S224J
	VR	2501	CCP1390
	VR	2551	CCP1392
E		Other Resistors	RS1/16S###J
		CAPACITORS	
	C	2502,2507,2553,2561	CKSRYB104K16
	C	2503	CEHAT470M16
	C	2505,2555	CEHAT101M25
	C	2506	ACH1450
	C	2508	CEHAT331M16
	C	2509	CEHAT470M25
	C	2510	ACH1413
F	C	2551	ACH1448
	C	2552	ACH1451
	C	2554	CEHAT101M16

Mark	No.	Description	Part No.
	C	2556	CKSRYF104Z50
	C	2557,2559,2560	CKSRYB104K25
	C	2558	CEHAT221M25
	C	2562	CCG1186
		[Y DD CON BLOCK]	
		SEMICONDUCTORS	
	IC	2601	PS2701A-1(L)
	IC	2605,2657	TA76431FR
	IC	2651	MIP2E3DMU
	IC	2652,2654,2658	TLP181(P-GR)
	IC	2653	BA10358F
	Q	2601,2681	2SD1898
	Q	2602	2SA1576A
	Q	2603,2684	HN1C01FU
	Q	2604,2605,2685	DTC143EUA
	Q	2651	2SA2005
	Q	2652	2SA1163
	Q	2682,2683	2SC4081
	D	2602,2651,2654,2656	CRH01
	D	2603,2684	1SS301
	D	2604,2606,2658,2659	1SS355
	D	2607,2608	UDZS4R7(B)
	D	2653	CRF03
	D	2682,2683	CRH01
	D	2685,2689	UDZS5R6(B)
	D	2686–2688	1SS355
	D	2690	UDZS15(B)
		MISCELLANEOUS	
	T	2601	ATK1156
	T	2651	ATK1163
	T	2681	ATK1162
		RESISTORS	
	R	2610,2613,2662,2666	RS1/16S4701F
	R	2615	RAB4C472J
	R	2651	RS1/10S4702F
	R	2653,2660	RS1/10S1501F
	R	2654,2691	RS3LMF301J
	R	2661	RS1/16S1002F
	R	2667	RS1/16S4701F
	R	2668-2670,2690	RS1/10S224J
	R	2694	RS1/16S5601F
	R	2698	RS1/16S6801F
	VR	2651	CCP1390
		Other Resistors	RS1/16S###J
		CAPACITORS	
	C	2602,2681,2686	CEHAT101M25
	C	2603,2685	ACG1105
	C	2604	CKSRYB102K50
	C	2605	CEHAT221M10
	C	2606,2607,2653,2684	CKSRYB104K16
	C	2652	ACH1449
	C	2654	CEHAT101M16
	C	2655,2660	CKSRYF104Z50
	C	2656,2657	CEHAT221M35
	C	2658	CKSRYB104K25

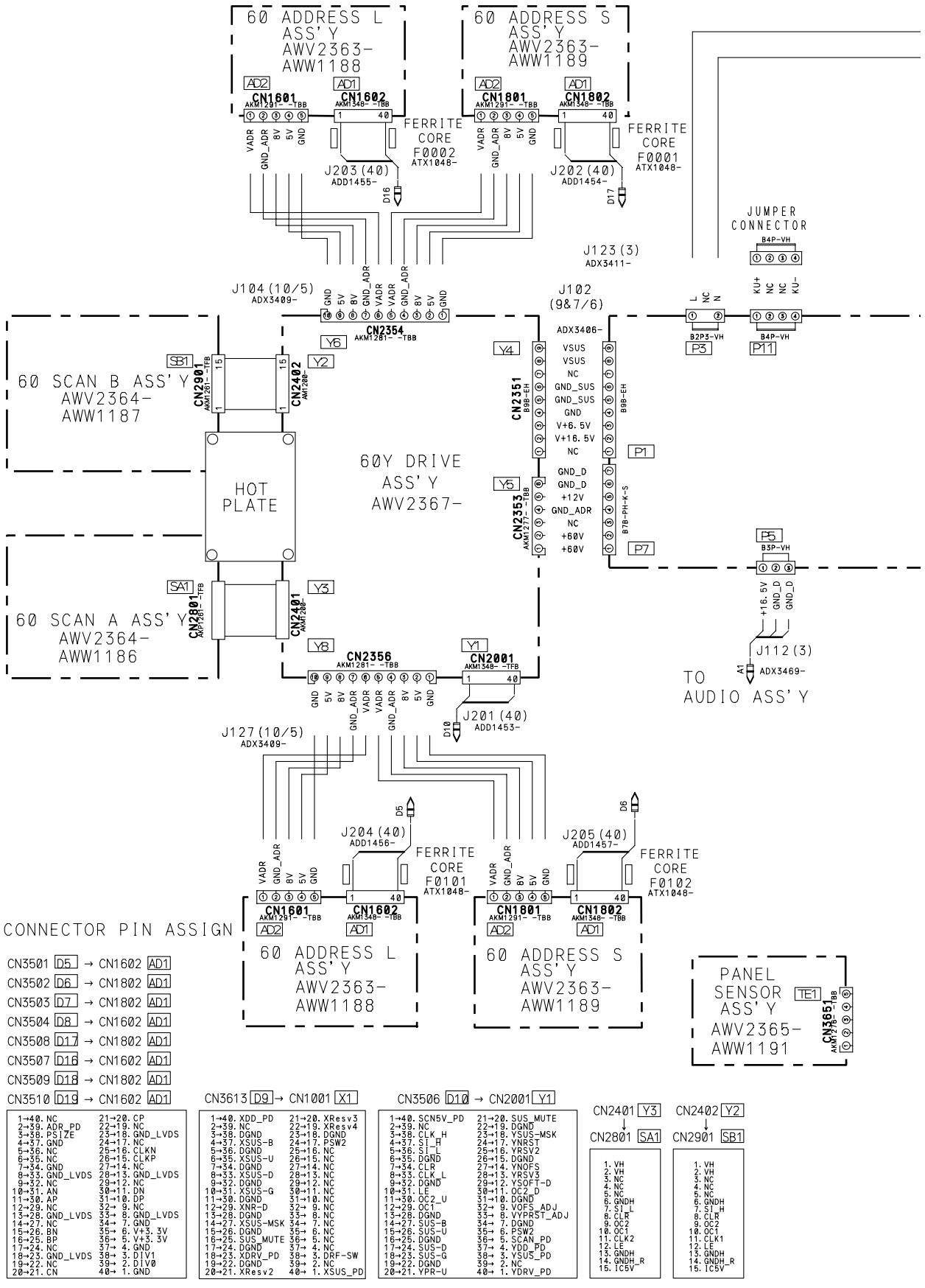
Mark	No.	Description	Part No.
C	2659		CKSRYB105K10
C	2661		CCG1186
C	2682		CKSYB105K25
C	2683		CKSRYB103K50
C	2687,2688		CKSRYB104K16

POWER SUPPLY UNIT

POWER SUPPLY UNIT has no service part.

4. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

4.1 OVERALL CONNECTION DIAGRAM (1/2)



CONNECTOR PIN ASSIGN

CN3501 D5 → CN1602 AD1
CN3502 D6 → CN1802 AD1
CN3503 D7 → CN1802 AD1
CN3504 D8 → CN1602 AD1
CN3508 D17 → CN1802 AD1
CN3507 D16 → CN1602 AD1
CN3509 D18 → CN1802 AD1
CN3510 D19 → CN1602 AD1

1→40. NC	21→20. CP
2→39. ADR_PD	22→19. NC
3→38. PSIZE	23→18. GND_LVDS
4→37. GND	24→17. NC
5→36. NC	25→16. CLKN
6→35. NC	26→15. CLKP
7→34. GND	27→14. NC
8→33. GND_LVDS	28→13. GND_LVDS
9→32. NC	29→12. NC
10→31. AN	30→11. DN
11→30. AP	31→10. DP
12→29. NC	32→ 9. NC
13→28. GND_LVDS	33→ 8. GND_LVDS
14→27. NC	34→ 7. GND
15→26. BN	35→ 6. V+3. 3V
16→25. BP	36→ 5. V+3. 3V
17→24. NC	37→ 4. GND
18→23. GND_LVDS	38→ 3. DIV1
19→22. NC	39→ 2. DIV0
20→21. CN	40→ 1. GND

CN3613 D9 → CN1001 X1

1→40. XDD_PD	21→20. XResv3
2→39. NC	22→19. XResv4
3→38. DGND	23→18. DGND
4→37. XSUS-B	24→17. PSW2
5→36. DGND	25→16. NC
6→35. XSUS-U	26→15. NC
7→34. DGND	27→14. NC
8→33. XSUS-D	28→13. NC
9→32. DGND	29→12. NC
10→31. XSUS-G	30→11. NC
11→30. DGND	31→10. NC
12→29. XNR-D	32→ 9. NC
13→28. DGND	33→ 8. NC
14→27. XSUS-MSK	34→ 7. NC
15→26. DGND	35→ 6. NC
16→25. SUS_MUTE	36→ 5. NC
17→24. DGND	37→ 4. NC
18→23. XDRV_PD	38→ 3. DRF-SW
19→22. DGND	39→ 2. NC
20→21. XResv2	40→ 1. XSUS_PD

CN3506 D10 → CN2001 Y1

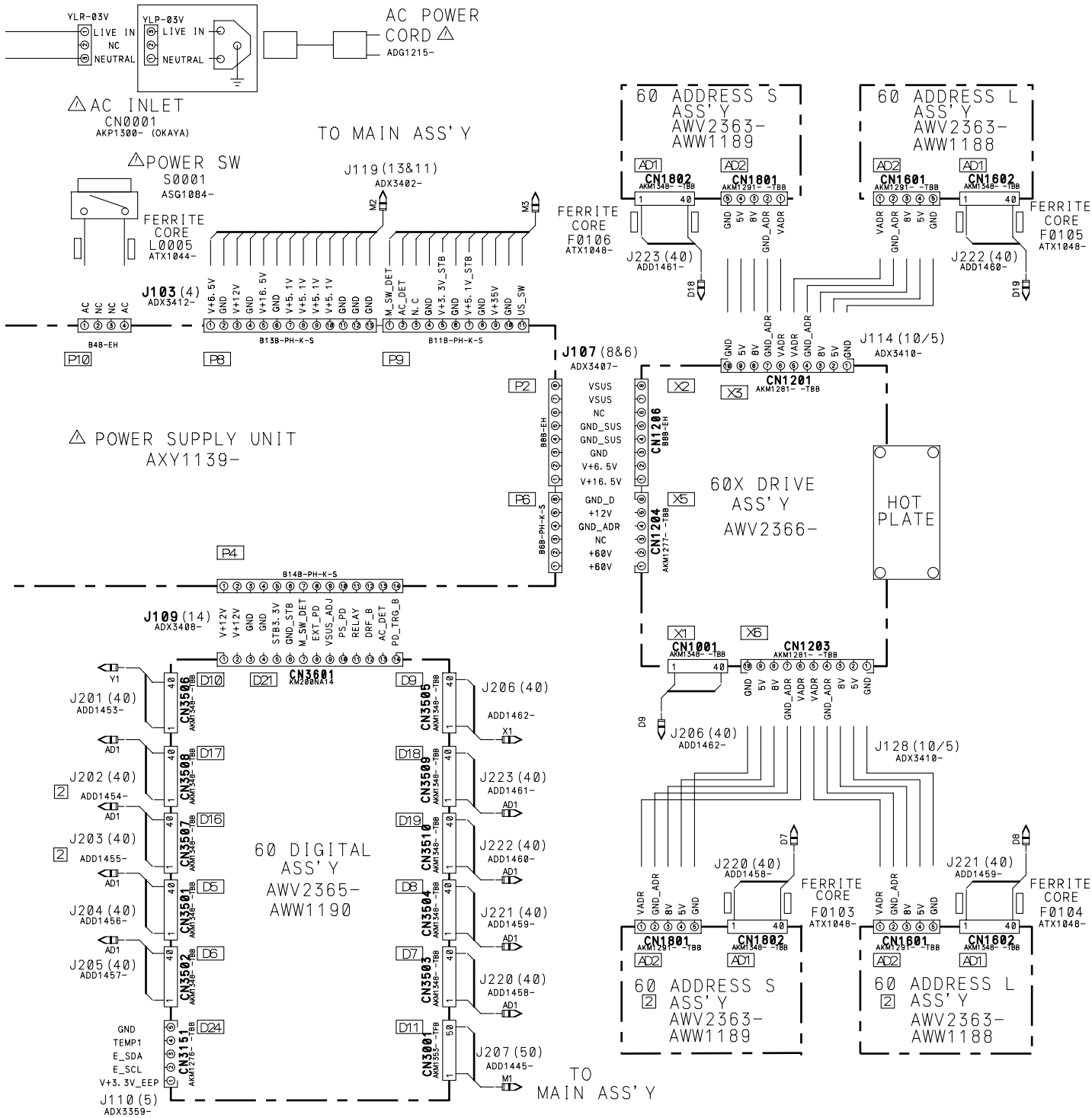
1→40. SCN5V_PD	21→20. SUS_MUTE
2→39. NC	22→19. DGND
3→38. CLK_H	23→18. VSUS-MSK
4→37. SI_H	24→17. YRRST
5→36. SI_L	25→16. YRSV2
6→35. DGND	26→15. DGND
7→34. CLR	27→14. YNOFS
8→33. CLK_L	28→13. YRSV3
9→32. DGND	29→12. YSOFT-D
10→31. LE	30→11. OC2_D
11→30. OC2_U	31→10. DGND
12→29. OC1	32→ 9. VOFS_ADJ
13→28. DGND	33→ 8. VYPRST_ADJ
14→27. SUS-B	34→ 7. DGND
15→26. SUS-U	35→ 6. PSW2
16→25. DGND	36→ 5. SCAN_PD
17→24. SUS-D	37→ 4. VDD_PD
18→23. SUS-G	38→ 3. YSUS_PD
19→22. DGND	39→ 2. NC
20→21. YPR-U	40→ 1. YDRV_PD

CN2401 Y3 → CN2801 SA1

1. VH
2. VH
3. NC
4. NC
5. NC
6. GNDH
7. SI_L
8. CLR
9. OC2
10. OC1
11. CLK2
12. LE
13. GNDH
14. GNDH_R
15. IC5V

CN2402 Y2 → CN2901 SB1

1. VH
2. VH
3. NC
4. NC
5. NC
6. GNDH
7. SI_H
8. CLR
9. OC2
10. OC1
11. CLK1
12. LE
13. GNDH
14. GNDH_R
15. IC5V

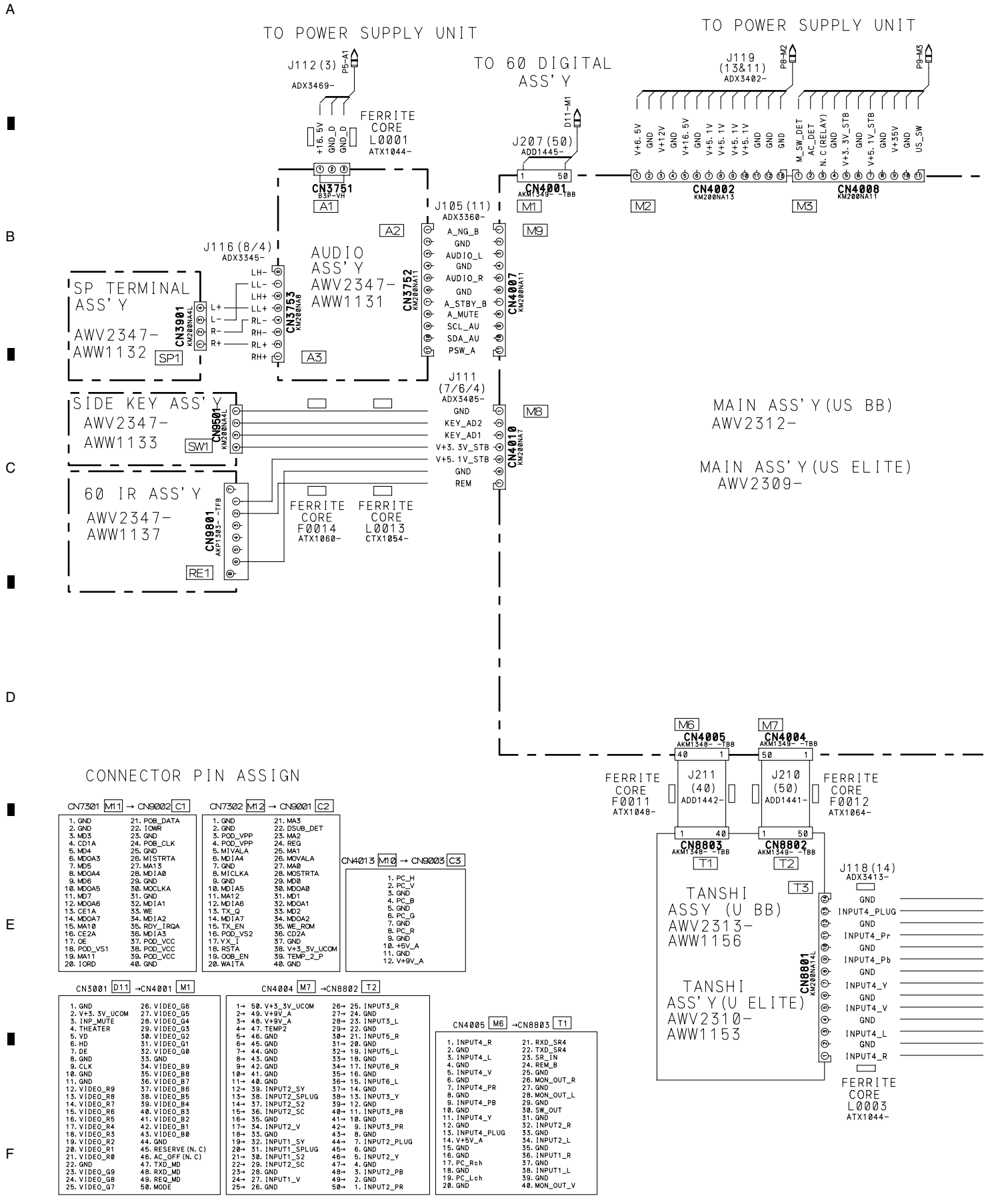


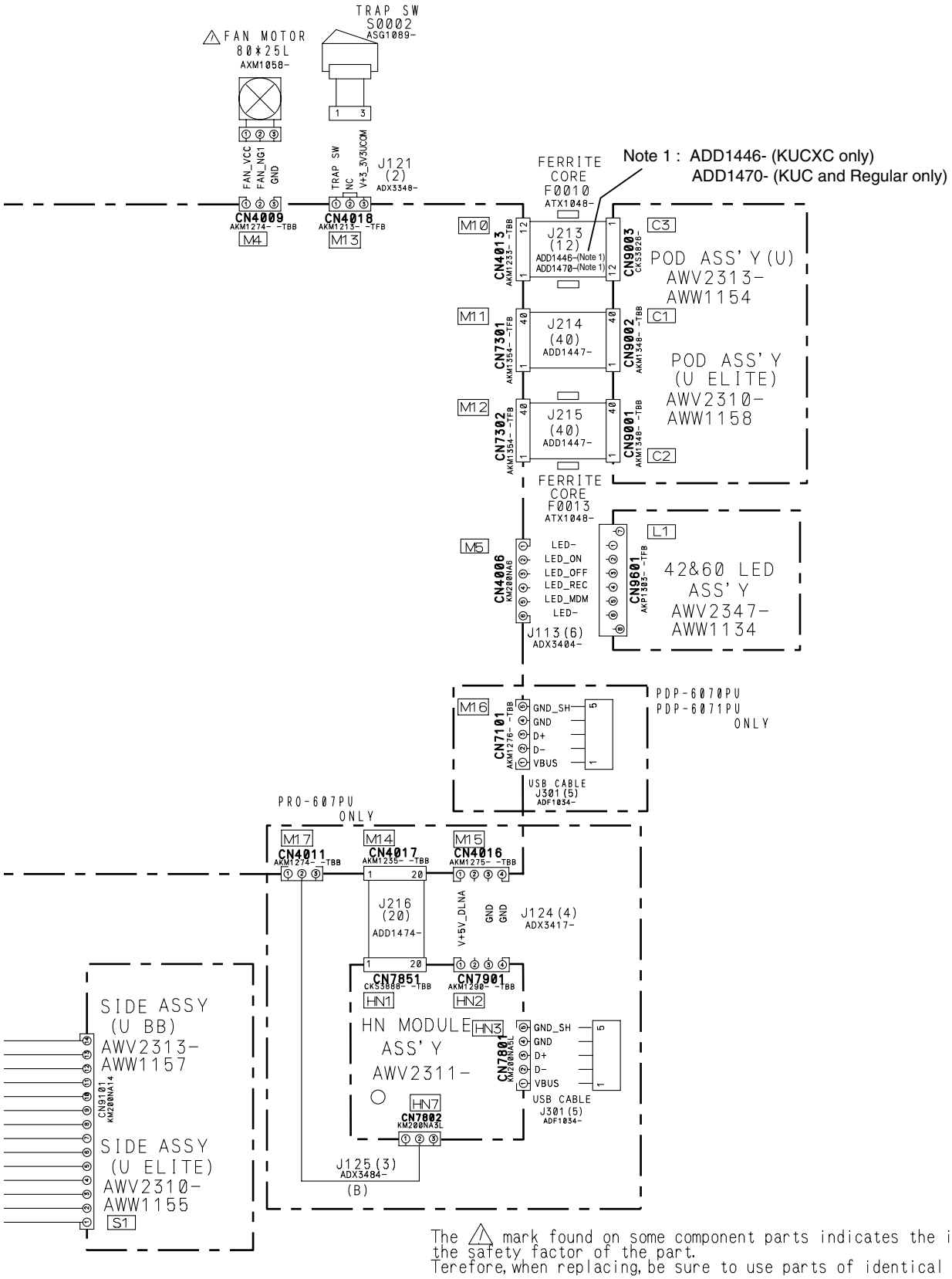
CN3001 D11 → CN4001 M1

1. GND	18. VIDEO_R3	35. VIDEO_B8
2. V+3. 3V_UCOM	19. VIDEO_R2	36. VIDEO_B7
3. INP_MUTE	20. VIDEO_R1	37. VIDEO_B6
4. THEATER	21. VIDEO_R0	38. VIDEO_B5
5. VD	22. GND	39. VIDEO_B4
6. HD	23. VIDEO_G9	40. VIDEO_B3
7. DE	24. VIDEO_G8	41. VIDEO_B2
8. GND	25. VIDEO_G7	42. VIDEO_B1
9. CLK	26. VIDEO_G6	43. VIDEO_B0
10. GND	27. VIDEO_G5	44. GND
11. GND	28. VIDEO_G4	45. RESERVE (N.C.)
12. VIDEO_R9	29. VIDEO_G3	46. AC_OFF (N.C.)
13. VIDEO_R8	30. VIDEO_G2	47. TXD_MD
14. VIDEO_R7	31. VIDEO_G1	48. RXD_MD
15. VIDEO_R6	32. VIDEO_G0	49. REQ_MD
16. VIDEO_R5	33. GND	50. GND
17. VIDEO_R4	34. VIDEO_B9	

- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- The encircled numbers denote measuring point in the schematic diagram. Waveforms, refer to service manual (ARP3395).

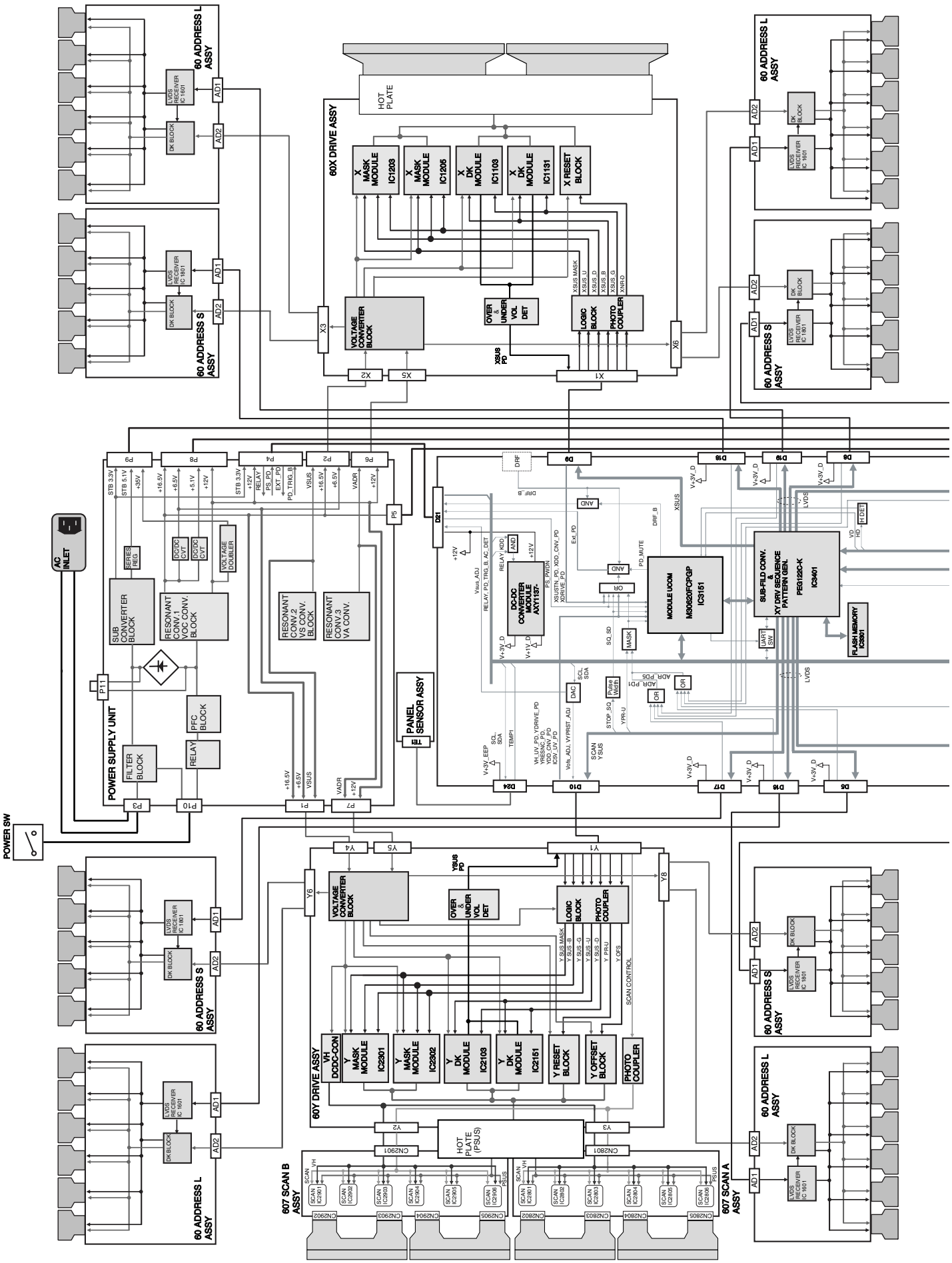
4.2 OVERALL CONNECTION DIAGRAM (2/2)

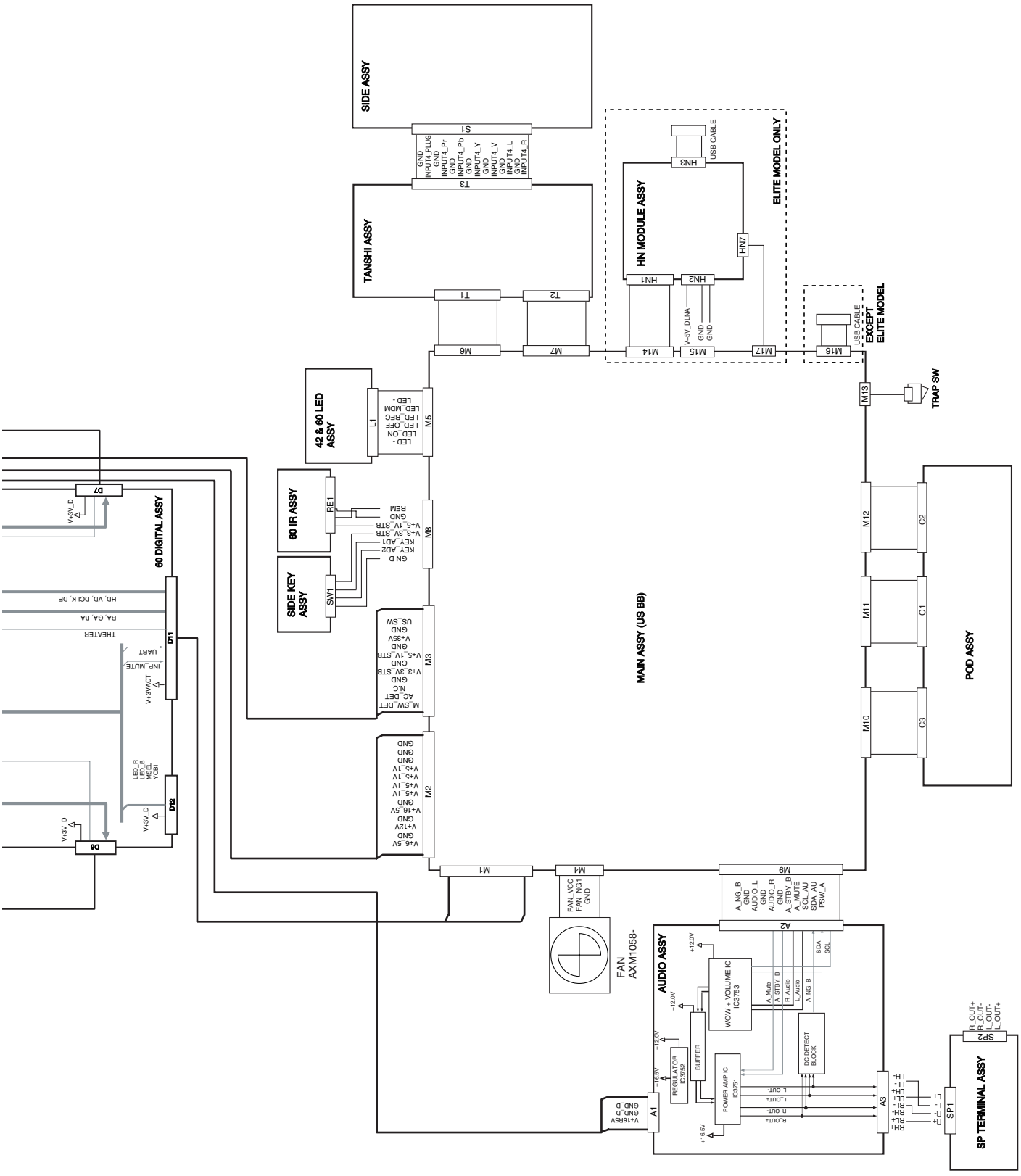

TO POWER SUPPLY UNIT
TO 60 DIGITAL ASS'Y
TO POWER SUPPLY UNIT
J112(3) ADX3469-
P5-A1
FERRITE CORE L0001 ATX1044-
+16.5V GND_D GND_D
CN3751 B3P-VH
A1
J207(50) ADD1445-
D11-M1
CN4001 AKM1349- -TBB
M1
J119 (13&11) ADX3402-
P8-M2
P9-M3
V+6.5V GND V+12V GND V+16.5V GND V+5.1V V+5.1V V+5.1V V+5.1V GND GND GND
M_SW_DET AC_DET N.C(RELAY) GND V+3.3V_STB GND V+5.1V_STB GND V+35V GND US_SW
CN4002 KM200NA13
M2
CN4008 KM200NA11
M3
J105(11) ADX3360-
A2
M9
A_NG_B GND AUDIO_L GND AUDIO_R GND A_STBY_B A_MUTE SCL_AU SDA_AU PSW_A
J116(8/4) ADX3345-
AUDIO ASS'Y AWV2347- AWW1131
LH- LL- LH+ LL+ RL- RH- RL+ RH+
CN3752 KM200NA11
CN3753 KM200NA8
CN4007 KM200NA11
A3
SP TERMINAL ASS'Y AWV2347- AWW1132
CN3901 KM200NA4L
L+ L- R- R+
SP1
J111 (7/6/4) ADX3405-
M8
GND KEY_AD2 KEY_AD1 V+3.3V_STB V+5.1V_STB GND REM
CN4010 KM200NA7
SIDE KEY ASS'Y AWV2347- AWW1133
CN9501 KM200NA4L
SW1
60 IR ASS'Y AWV2347- AWW1137
CN9801 AKP1303- -TFB
RE1
FERRITE CORE F0014 ATX1060-
FERRITE CORE L0013 CTX1054-
MAIN ASS'Y(US BB) AWV2312-
MAIN ASS'Y(US ELITE) AWV2309-
M6
CN4005 AKM1348- -TBB
M7
CN4004 AKM1349- -TBB
FERRITE CORE F0011 ATX1048-
J211 (40) ADD1442-
J210 (50) ADD1441-
FERRITE CORE F0012 ATX1064-
CN8803 AKM1348- -TBB
T1
CN8802 AKM1349- -TBB
T2
T3
TANSHI ASSY (U BB) AWV2313- AWW1156
TANSHI ASS'Y(U ELITE) AWV2310- AWW1153
CN8801 KM200NA14L
J118(14) ADX3413-
GND INPUT4_PLUG GND INPUT4_Pr GND INPUT4_Pb GND INPUT4_Y GND INPUT4_V GND INPUT4_L GND INPUT4_R
FERRITE CORE L0003 ATX1044-
CONNECTOR PIN ASSIGN
CN7301 M11 → CN9002 C1
1. GND 2. GND 3. MD3 4. CD1A 5. MD4 6. MDOA3 7. MD5 8. MDOA4 9. MD6 10. MDOA5 11. MD7 12. MDOA6 13. CE1A 14. MDOA7 15. MA10 16. CE2A 17. OE 18. POD_VS1 19. MA11 20. IORD
21. POB_DATA 22. IOWR 23. GND 24. POB_CLK 25. GND 26. MISTRTA 27. MA13 28. MDIA0 29. GND 30. MOCLKA 31. GND 32. MDIA1 33. WE 34. MDIA2 35. RDY_IRQA 36. MDIA3 37. POD_VCC 38. POD_VCC 39. POD_VCC 40. GND
CN7302 M12 → CN9001 C2
1. GND 2. GND 3. POD_VPP 4. POD_VPP 5. MIVALA 6. MDIA4 7. GND 8. MICLKA 9. GND 10. MDIA5 11. MA12 12. MDIA6 13. TX_Q 14. MDIA7 15. TX_EN 16. POD_VS2 17. YX_I 18. RSTA 19. OOB_EN 20. WAITA
21. MA3 22. DSUB_DET 23. MA2 24. REG 25. MA1 26. MOVALA 27. MA0 28. MOSTRTA 29. MD0 30. MDOA0 31. MD1 32. MDOA1 33. MD2 34. MDOA2 35. WE_ROM 36. CD2A 37. GND 38. V+3_3V_UCOM 39. TEMP_2_P 40. GND
CN4013 M10 → CN9003 C3
1. PC_H 2. PC_V 3. GND 4. PC_B 5. GND 6. PC_G 7. GND 8. PC_R 9. GND 10. +5V_A 11. GND 12. V+9V_A
CN3001 D11 →CN4001 M1
1. GND 2. V+3. 3V_UCOM 3. INP_MUTE 4. THEATER 5. VD 6. HD 7. DE 8. GND 9. CLK 10. GND 11. GND 12. VIDEO_R9 13. VIDEO_R8 14. VIDEO_R7 15. VIDEO_R6 16. VIDEO_R5 17. VIDEO_R4 18. VIDEO_R3 19. VIDEO_R2 20. VIDEO_R1 21. VIDEO_R0 22. GND 23. VIDEO_G9 24. VIDEO_G8 25. VIDEO_G7
26. VIDEO_G6 27. VIDEO_G5 28. VIDEO_G4 29. VIDEO_G3 30. VIDEO_G2 31. VIDEO_G1 32. VIDEO_G0 33. GND 34. VIDEO_B9 35. VIDEO_B8 36. VIDEO_B7 37. VIDEO_B6 38. VIDEO_B5 39. VIDEO_B4 40. VIDEO_B3 41. VIDEO_B2 42. VIDEO_B1 43. VIDEO_B0 44. GND 45. RESERVE (N.C) 46. AC_OFF (N.C) 47. TXD_MD 48. RXD_MD 49. REQ_MD 50. MODE
CN4004 M7 →CN8802 T2
1→ 50. V+3_3V_UCOM 2→ 49. V+9V_A 3→ 48. V+9V_A 4→ 47. TEMP2 5→ 46. GND 6→ 45. GND 7→ 44. GND 8→ 43. GND 9→ 42. GND 10→ 41. GND 11→ 40. GND 12→ 39. INPUT2_SY 13→ 38. INPUT2_SPLUG 14→ 37. INPUT2_S2 15→ 36. INPUT2_SC 16→ 35. GND 17→ 34. INPUT2_V 18→ 33. GND 19→ 32. INPUT1_SY 20→ 31. INPUT1_SPLUG 21→ 30. INPUT1_S2 22→ 29. INPUT2_SC 23→ 28. GND 24→ 27. INPUT1_V 25→ 26. GND
26→ 25. INPUT3_R 27→ 24. GND 28→ 23. INPUT3_L 29→ 22. GND 30→ 21. INPUT5_R 31→ 20. GND 32→ 19. INPUT5_L 33→ 18. GND 34→ 17. INPUT6_R 35→ 16. GND 36→ 15. INPUT6_L 37→ 14. GND 38→ 13. INPUT3_Y 39→ 12. GND 40→ 11. INPUT3_PB 41→ 10. GND 42→ 9. INPUT3_PR 43→ 8. GND 44→ 7. INPUT2_PLUG 45→ 6. GND 46→ 5. INPUT2_Y 47→ 4. GND 48→ 3. INPUT2_PB 49→ 2. GND 50→ 1. INPUT2_PR
CN4005 M6 →CN8803 T1
1. INPUT4_R 2. GND 3. INPUT4_L 4. GND 5. INPUT4_V 6. GND 7. INPUT4_PR 8. GND 9. INPUT4_PB 10. GND 11. INPUT4_Y 12. GND 13. INPUT4_PLUG 14. V+5V_A 15. GND 16. GND 17. PC_Rch 18. GND 19. PC_Lch 20. GND
21. RXD_SR4 22. TXD_SR4 23. SR_IN 24. REM_B 25. GND 26. MON_OUT_R 27. GND 28. MON_OUT_L 29. GND 30. SW_OUT 31. GND 32. INPUT2_R 33. GND 34. INPUT2_L 35. GND 36. INPUT1_R 37. GND 38. INPUT1_L 39. GND 40. MON_OUT_V



The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.

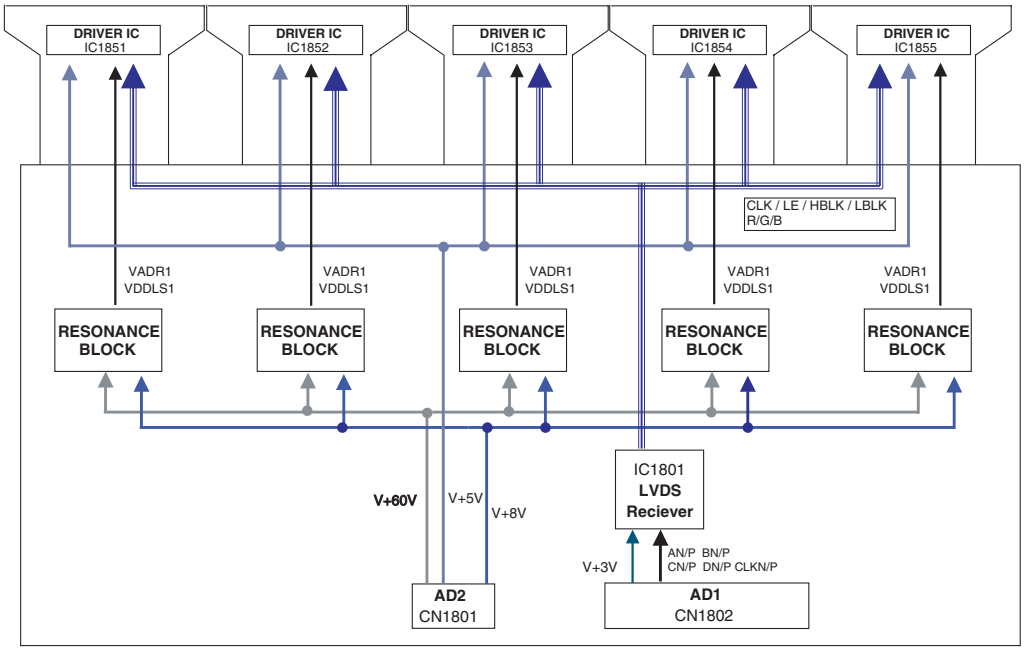
4.3 OVERALL BLOCK DIAGRAM



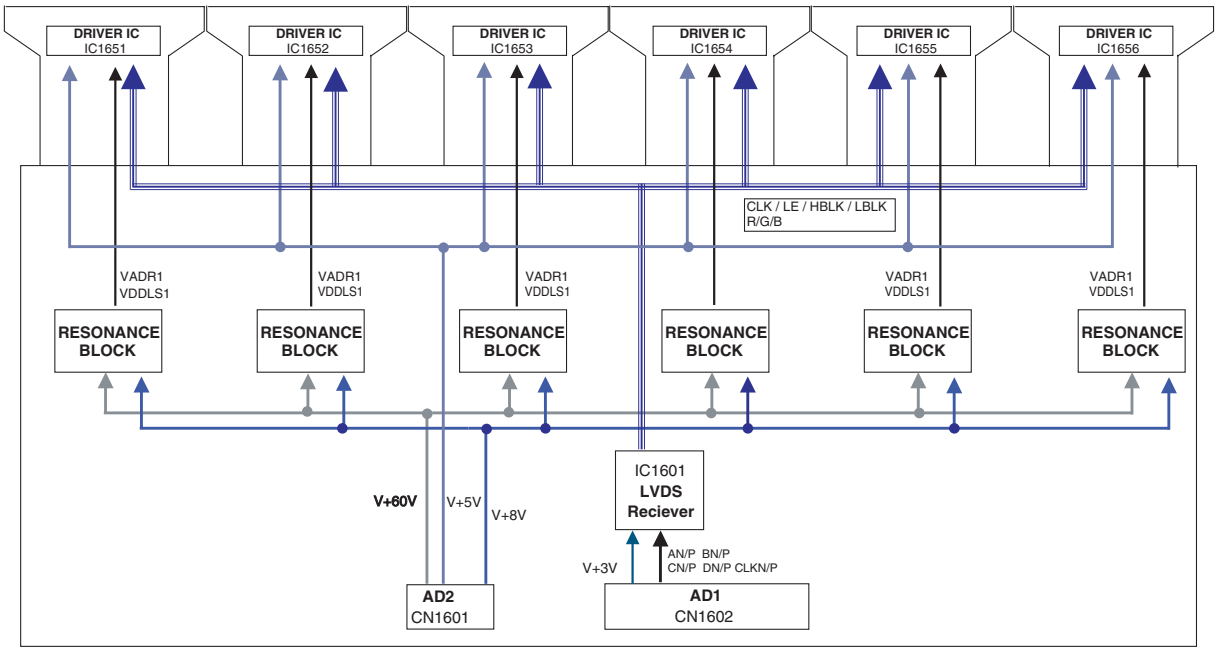

SIDE ASSY
S1
T3
TANSHI ASSY
T1
T2
M6
M7
HN MODULE ASSY
HN3
USB CABLE
HN7
HN1
HN2
M14
M15
M17
ELITE MODEL ONLY
M16
USB CABLE
EXCEPT ELITE MODEL
M13
TRAP SW
42 & 60 LED ASSY
L1
M5
60 IR ASSY
RE1
M8
SIDE KEY ASSY
SW1
60 DIGITAL ASSY
D7
D11
D12
D8
MAIN ASSY (US BB)
M3
M2
M1
M4
M9
M12
M11
M10
C2
C1
C3
POD ASSY
FAN AXM1058-
A2
AUDIO ASSY
WOW + VOLUME IC IC3753
REGULATOR IC3752
BUFFER
POWER AMP IC IC3751
DC DETECT BLOCK
A1
A3
SP2
SP1
SP TERMINAL ASSY

4.4 60 ADDRESS S and L ASSYS

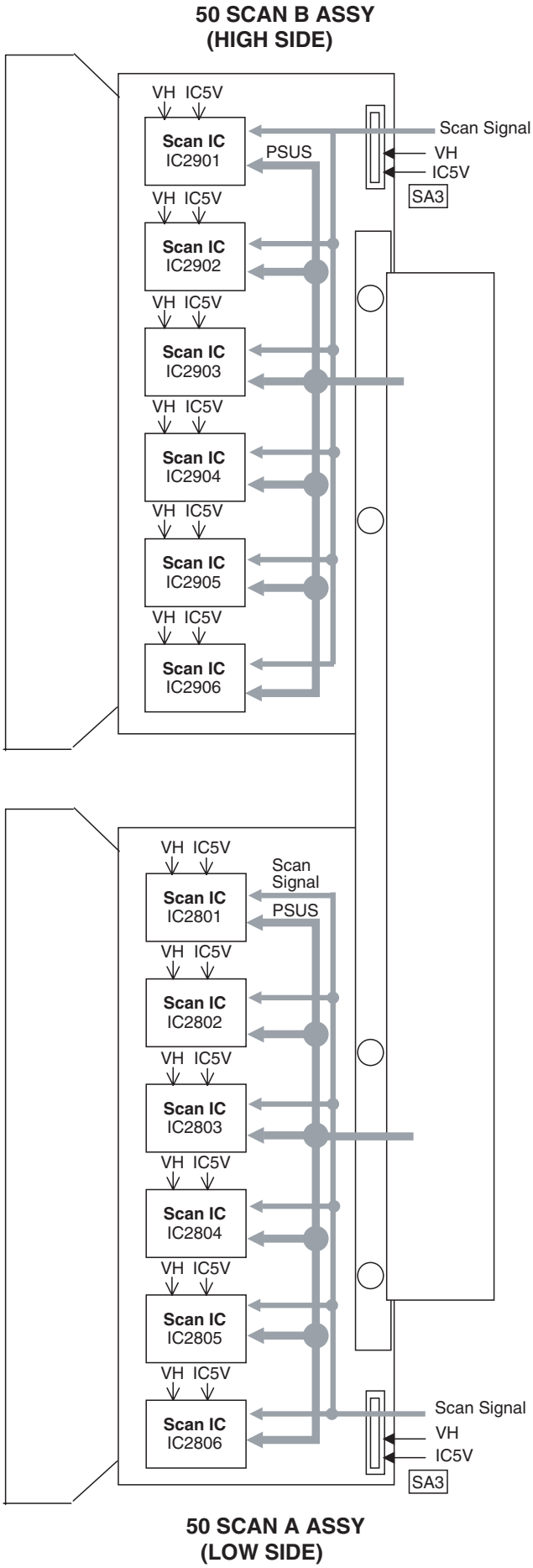
60 ADDRESS S ASS'Y



60 ADDRESS L ASS'Y

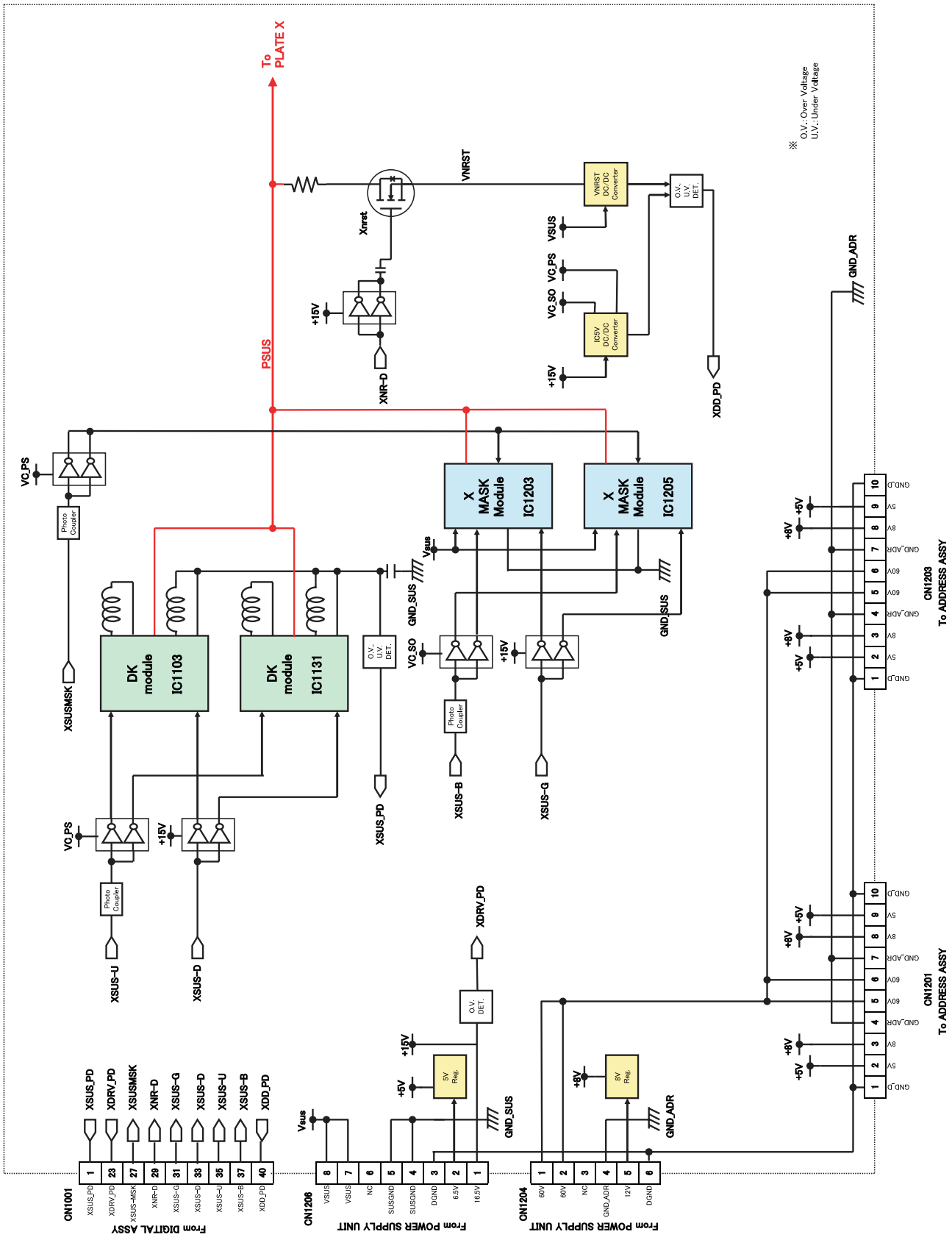


4.5 60 SCAN A and B ASSYS

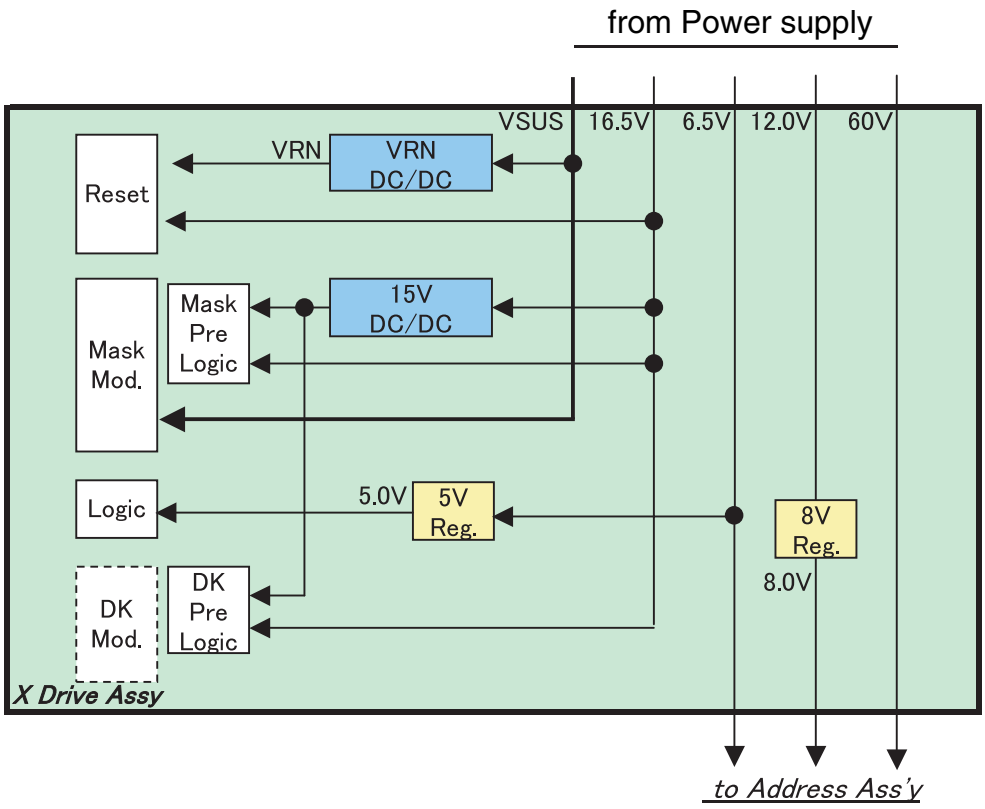


4.6 60 X DRIVE ASSY

60 X DRIVE ASSY

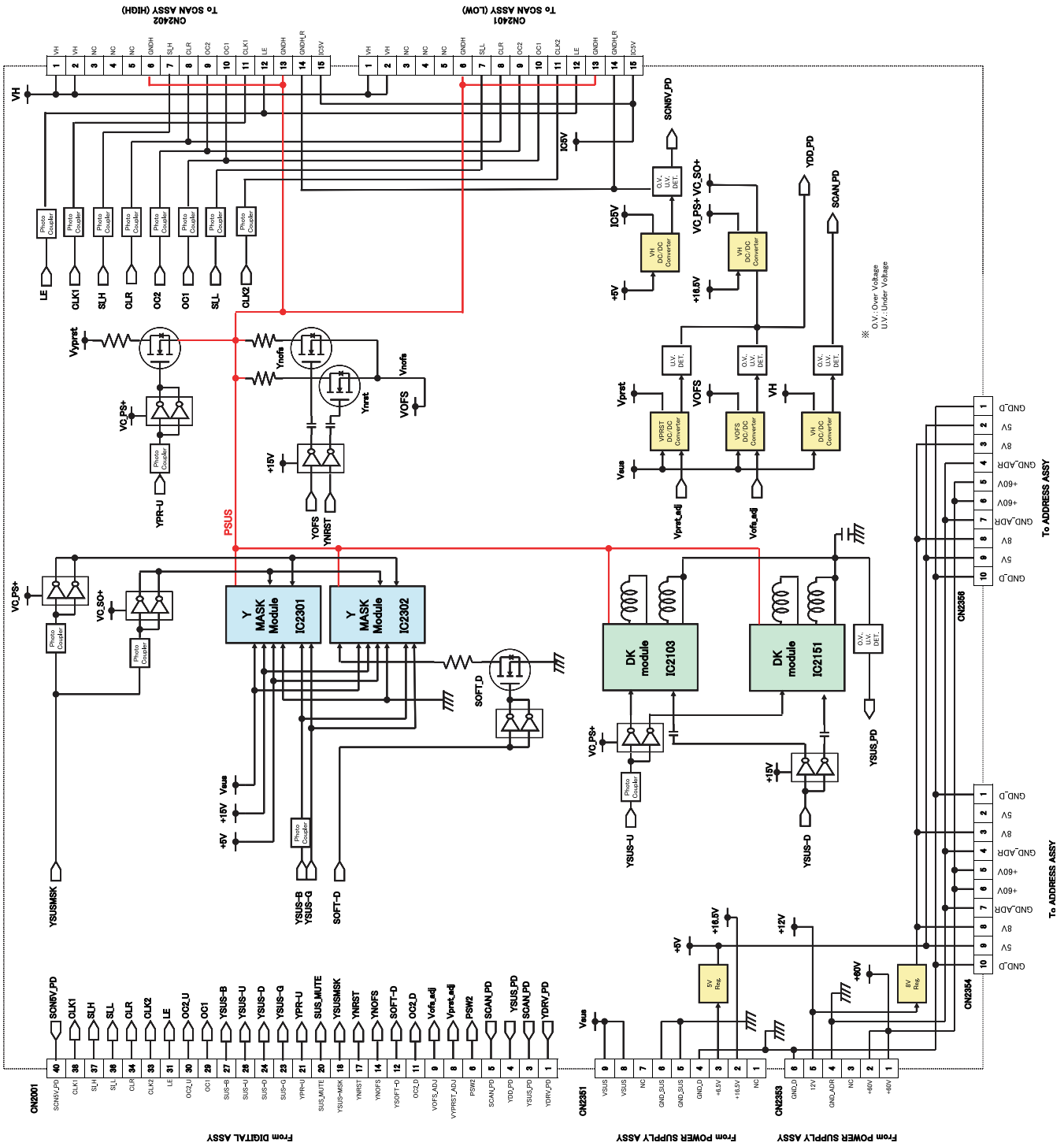


■ X Drive power supply map

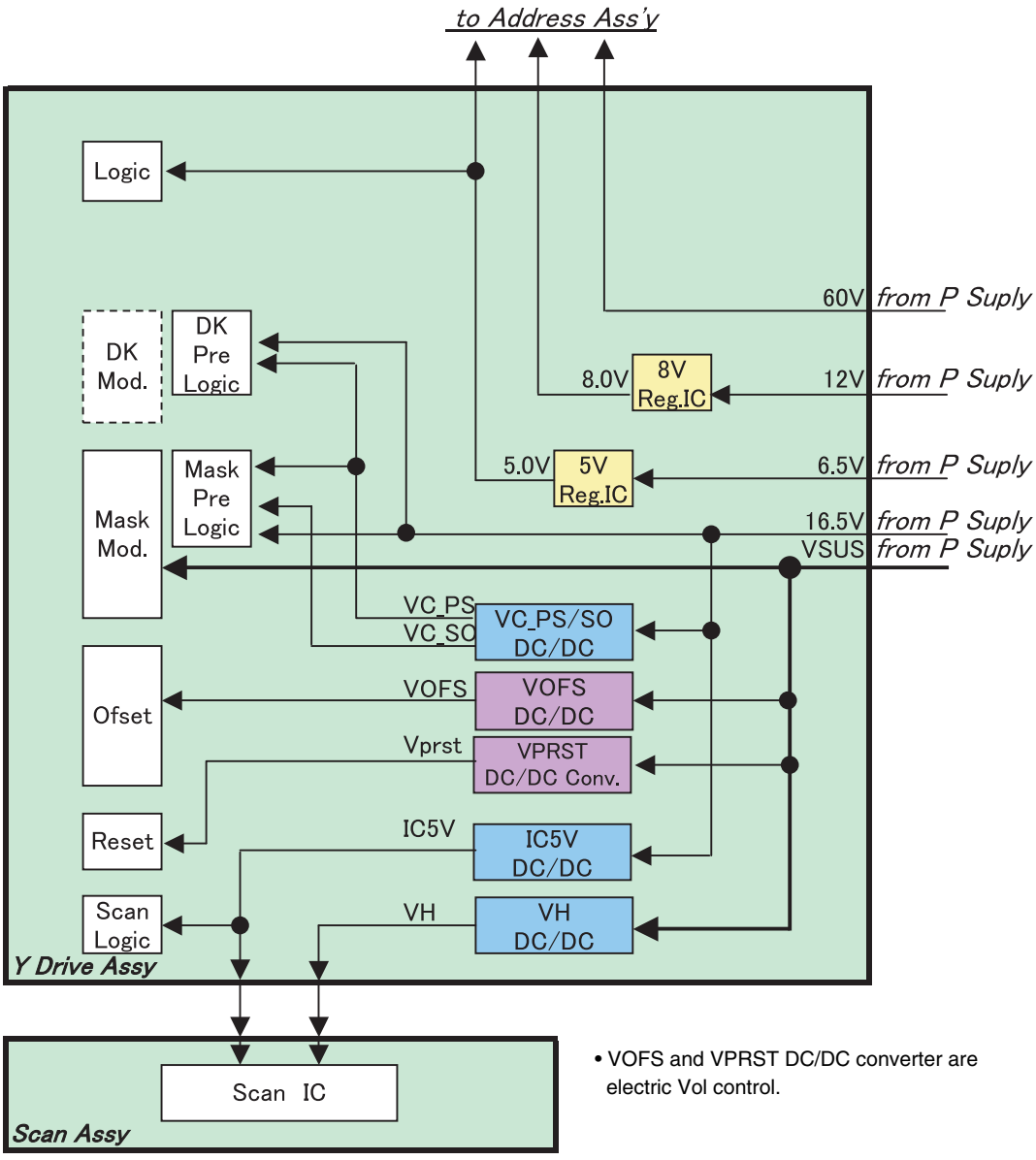


4.7 60 Y DRIVE ASSY

60 Y DRIVE ASSY

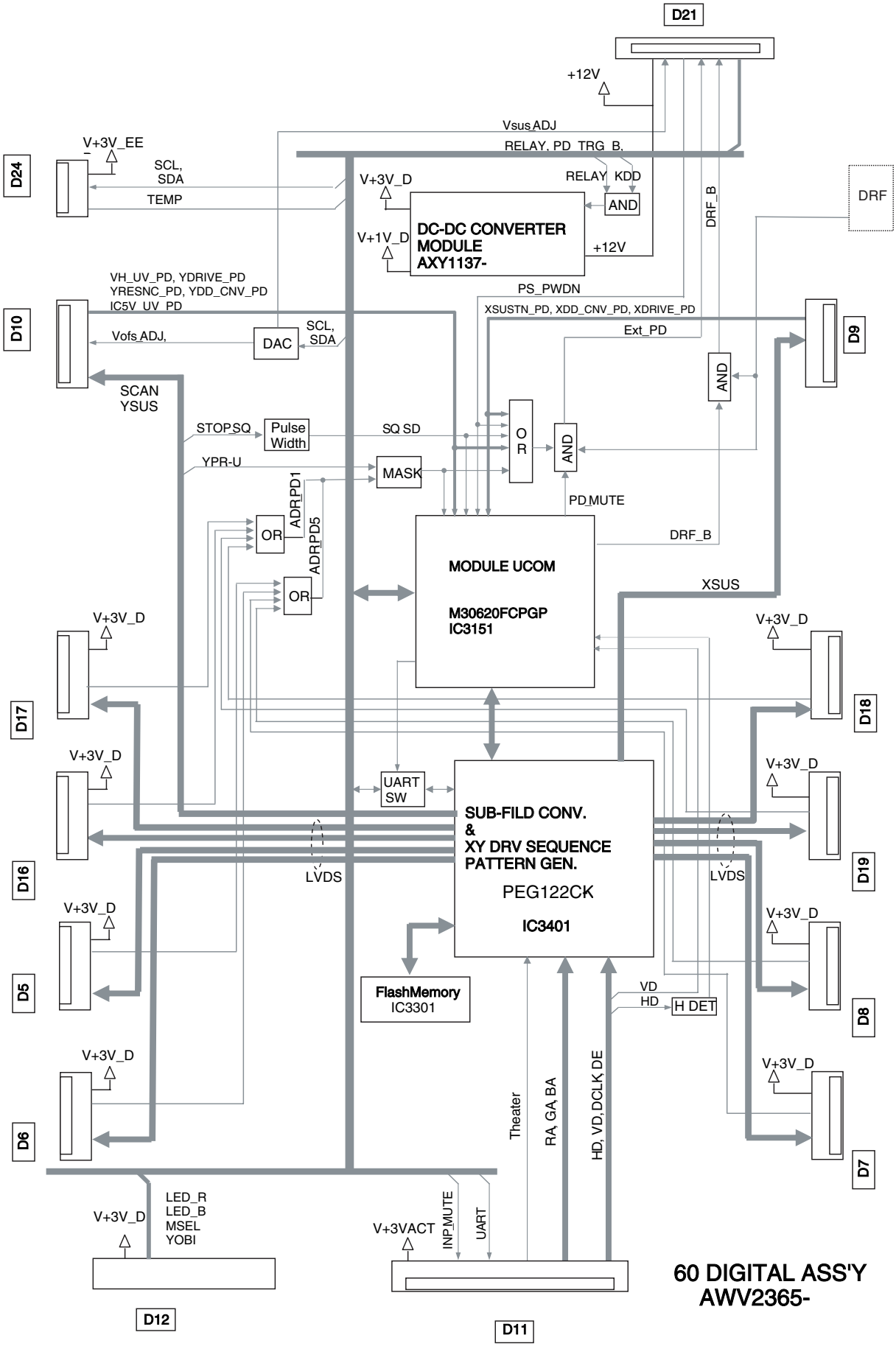


■ Y Drive power supply map

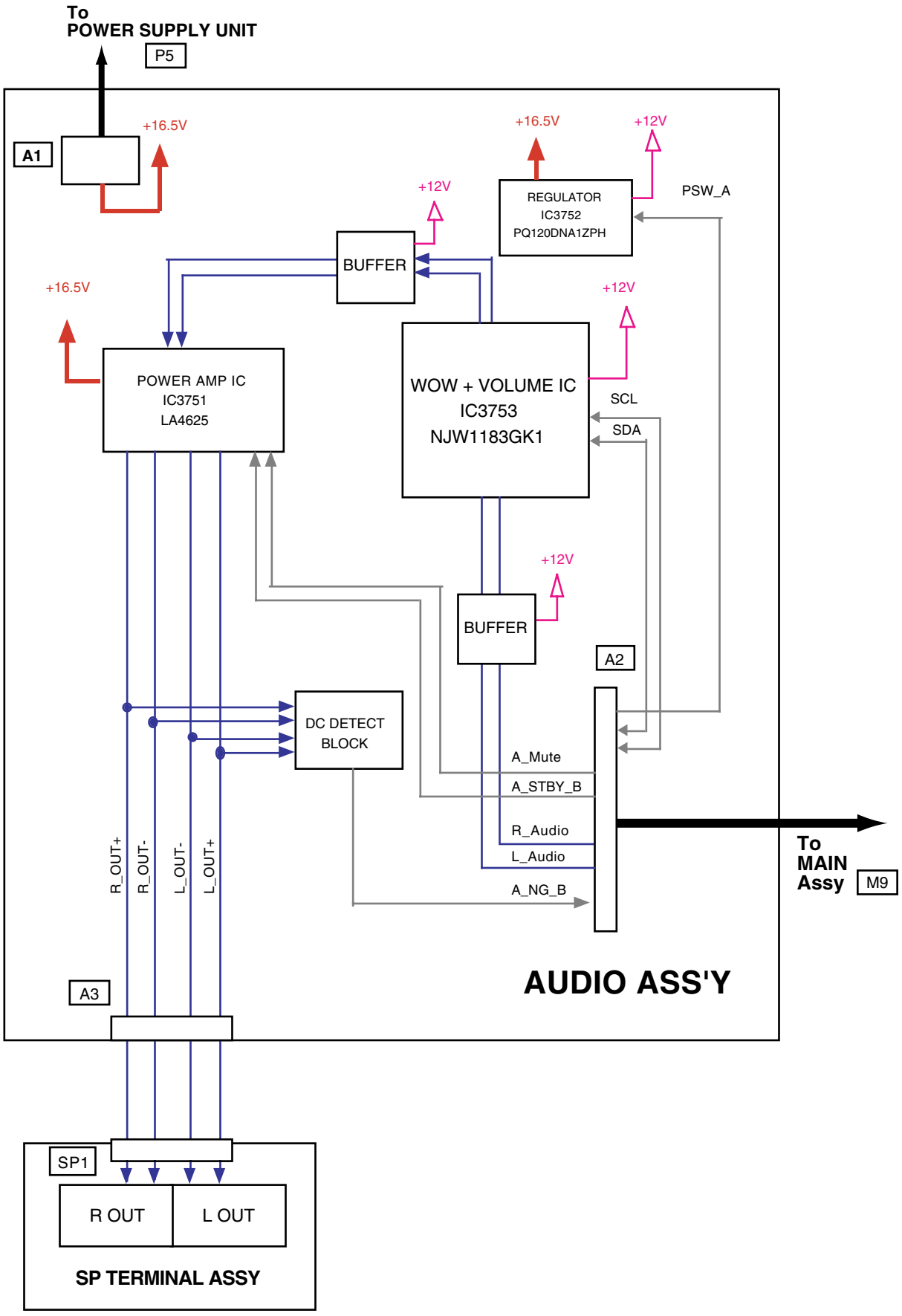


• VOFS and VPRST DC/DC converter are electric Vol control.

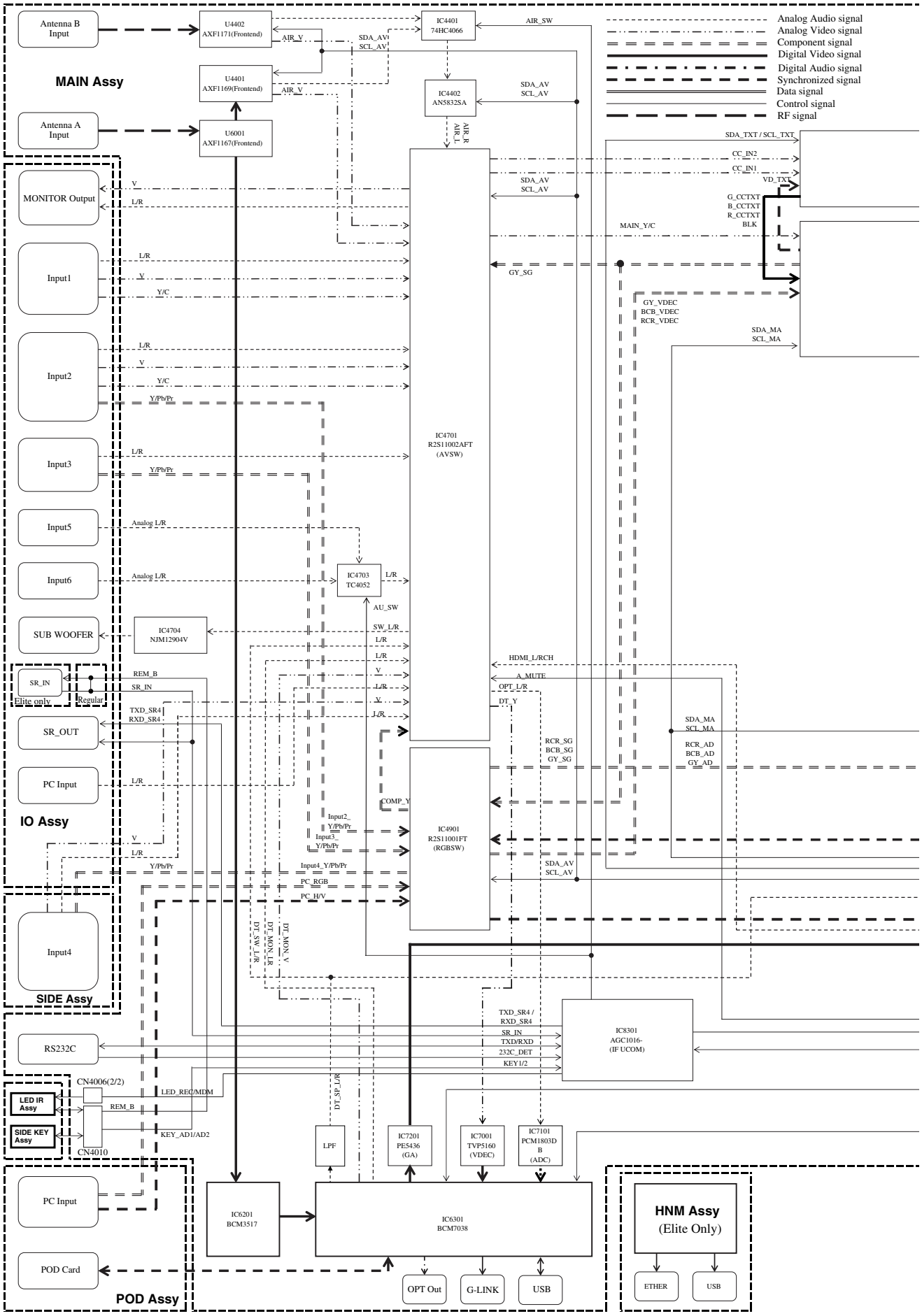
4.8 60 DIGITAL ASSY

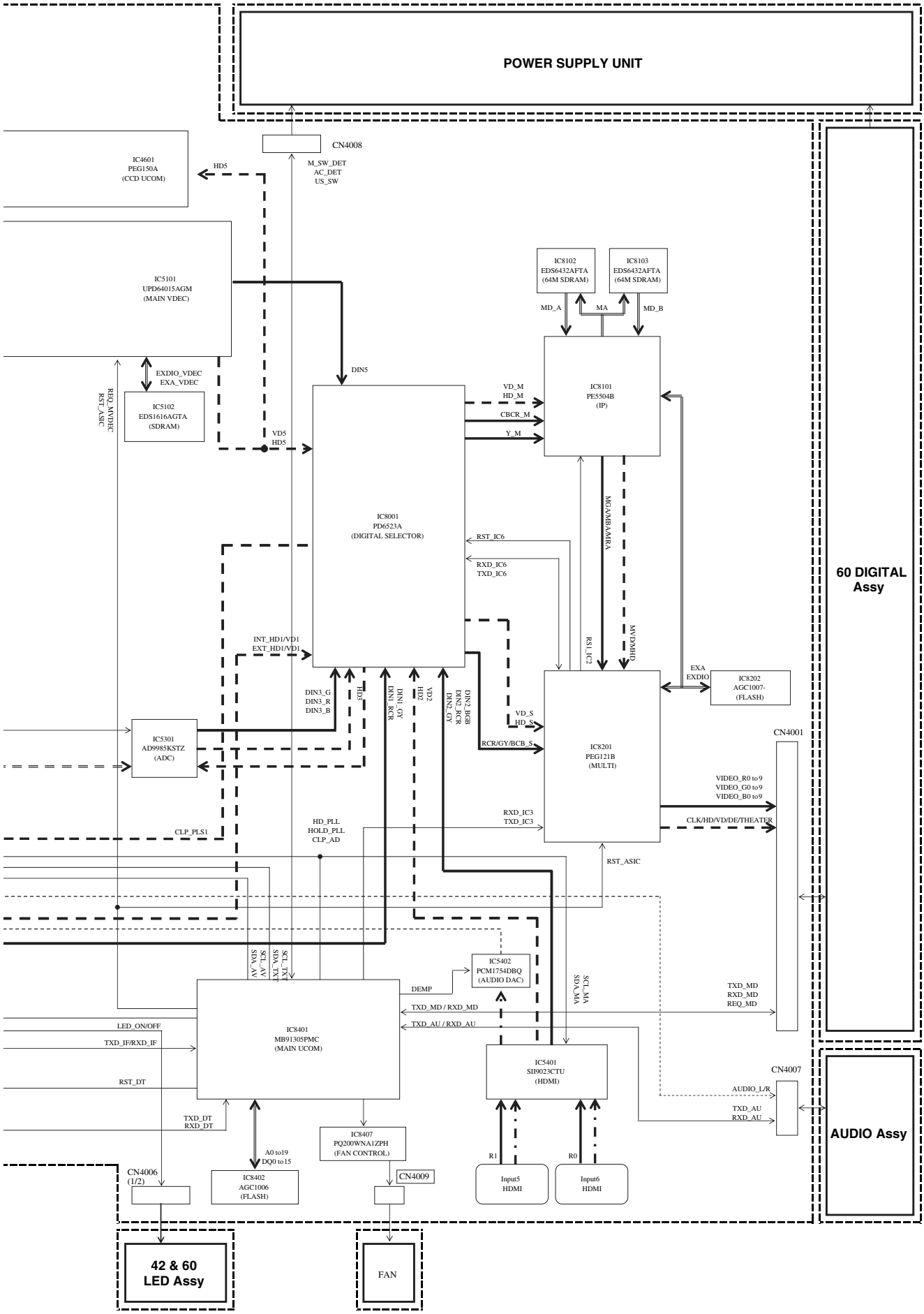


4.9 AUDIO ASSY



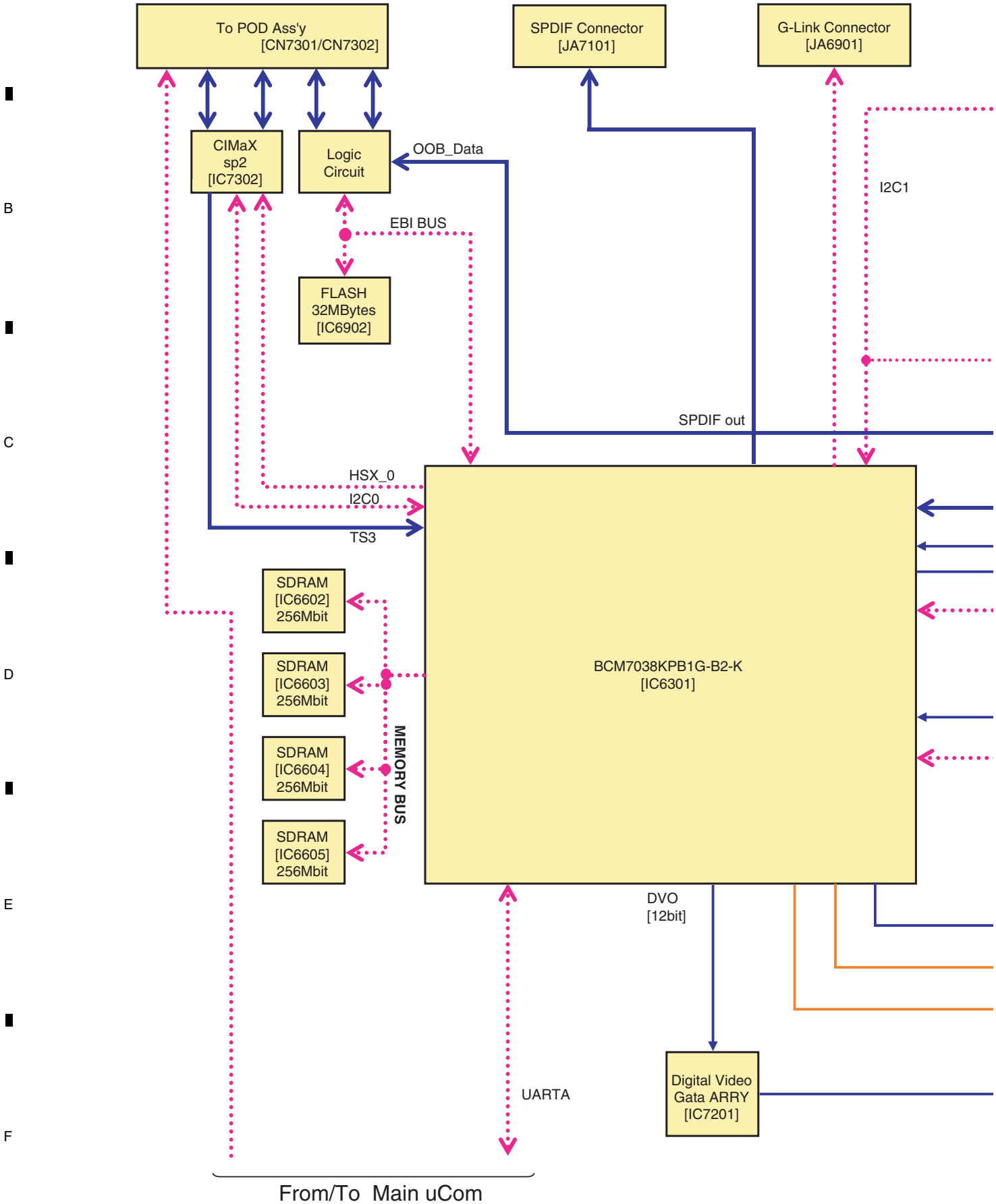
4.10 SIGNAL BLOCK DIAGRAM

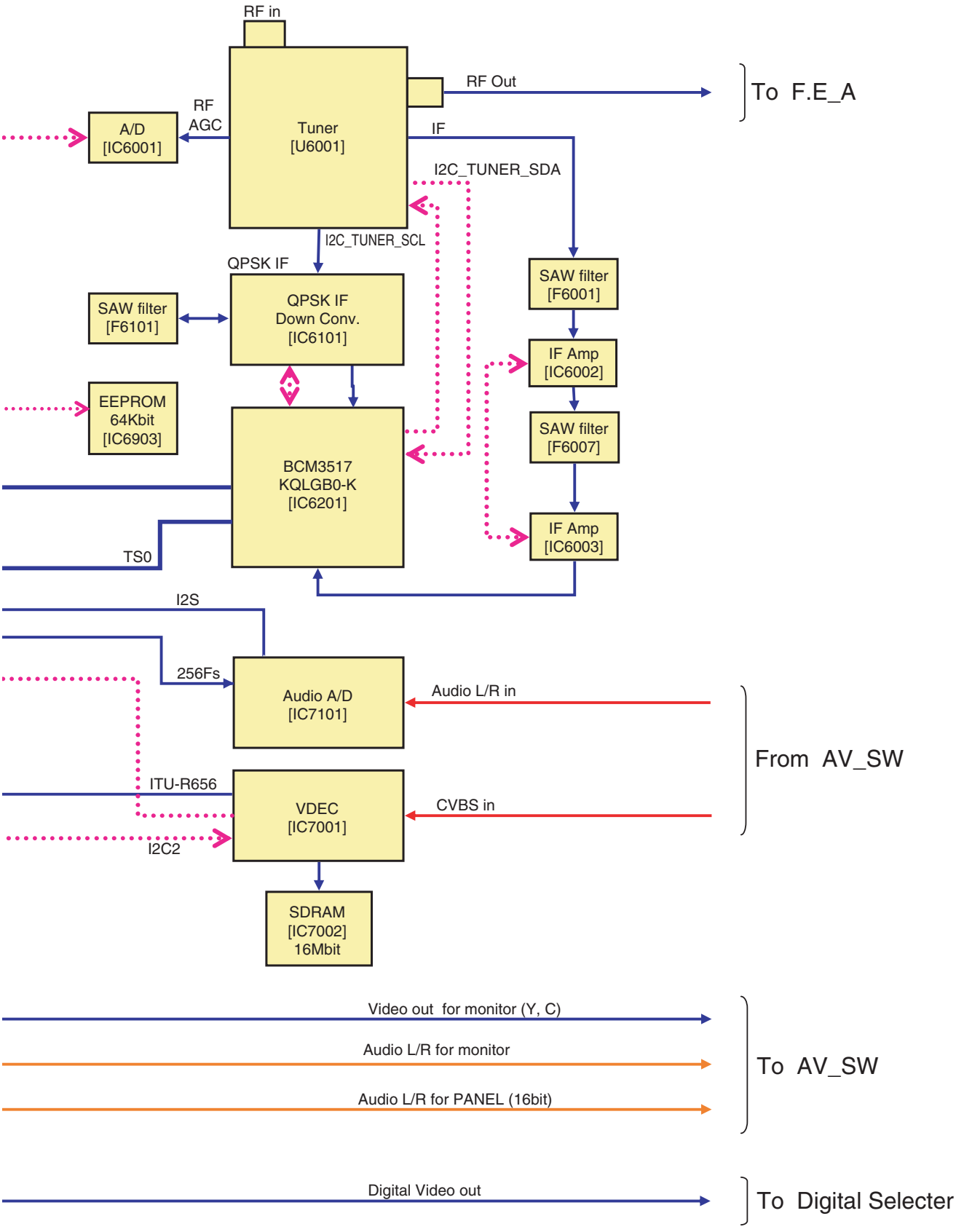



POWER SUPPLY UNIT
IC4601
PEG150A
(CCD UCOM)
HD5
CN4008
M_SW_DET
AC_DET
US_SW
IC5101
UPD64015AGM
(MAIN VDEC)
EXDIO_VDEC
EXA_VDEC
IC5102
EDS1616AGTA
(SDRAM)
REQ_MYDEC
RST_ASIC
DIN5
VD5
HD5
IC8102
EDS6432AFTA
(64M SDRAM)
IC8103
EDS6432AFTA
(64M SDRAM)
MD_A
MA
MD_B
IC8101
PE5504B
(IP)
VD_M
HD_M
CBCR_M
Y_M
IC8001
PD6523A
(DIGITAL SELECTOR)
RST_IC6
RXD_IC6
TXD_IC6
MGA/MBA/MRA
MYD/MHD
RS1_IC2
INT_HD1/VD1
EXT_HD1/VD1
DIN3_G
DIN3_R
DIN3_B
HD3
DIN1_RCR
DIN1_GY
VD2
HD2
DIN2_GY
DIN2_BCB
DIN2_RCR
VD_S
HD_S
RCR/GY/BCB_S
EXA
EXDIO
IC8202
AGC1007-
(FLASH)
IC5301
AD9985KSTZ
(ADC)
IC8201
PEG121B
(MULTI)
CN4001
VIDEO_R0 to 9
VIDEO_G0 to 9
VIDEO_B0 to 9
CLK/HD/VD/DE/THEATER
RXD_IC3
TXD_IC3
CLP_PLS1
HD_PLL
HOLD_PLL
CLP_AD
RST_ASIC
60 DIGITAL
Assy
SCL_AV
SDA_AV
SCL_TXT
SDA_TXT
IC5402
PCM1754DBQ
(AUDIO DAC)
SCL_MA
SDA_MA
DEMP
TXD_MD / RXD_MD
TXD_AU / RXD_AU
TXD_MD
RXD_MD
REQ_MD
LED_ON/OFF
TXD_IF/RXD_IF
RST_DT
IC8401
MB91305PMC
(MAIN UCOM)
IC5401
SII9023CTU
(HDMI)
CN4007
AUDIO_L/R
TXD_AU
RXD_AU
AUDIO Assy
TXD_DT
RXD_DT
A0 to19
DQ0 to15
IC8407
PQ200WNA1ZPH
(FAN CONTROL)
R1
R0
CN4006
(1/2)
IC8402
AGC1006
(FLASH)
CN4009
Input5
HDMI
Input6
HDMI
42 & 60
LED Assy
FAN

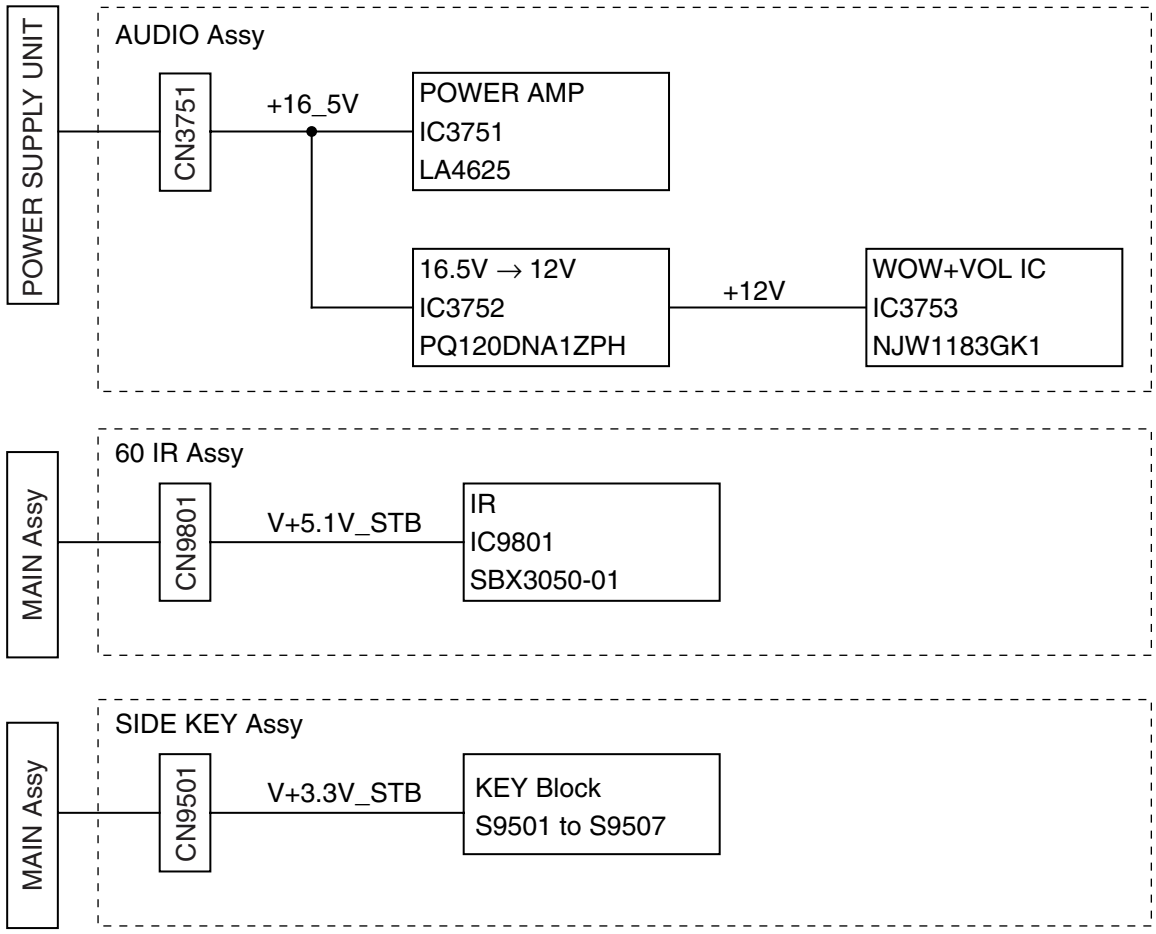
4.11 DTV BLOCK DIAGRAM

MTB American Digital Tuner Block R07SX (Block Diagram)

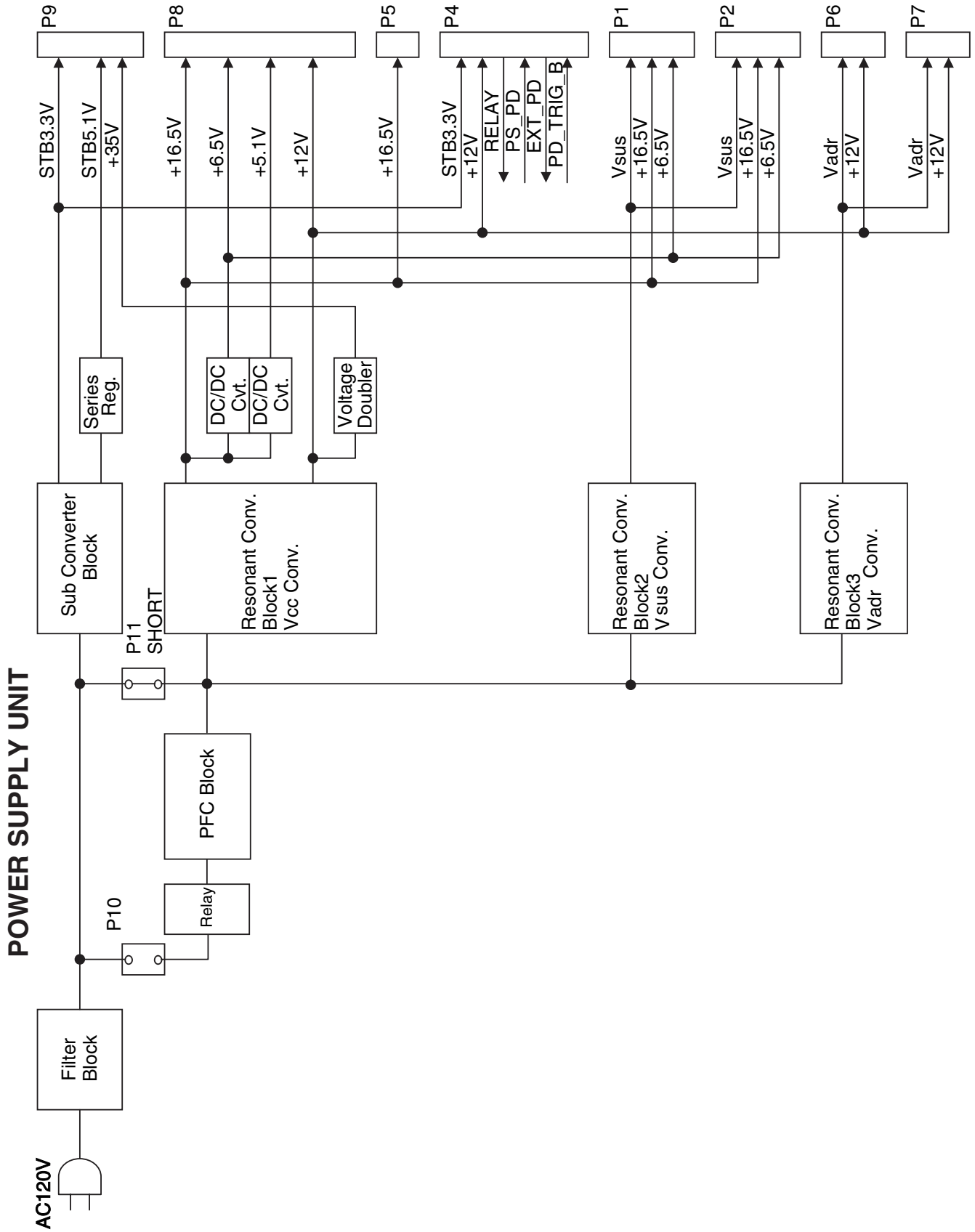



RF in
Tuner
[U6001]
RF Out
To F.E_A
RF
AGC
A/D
[IC6001]
IF
I2C_TUNER_SDA
I2C_TUNER_SCL
QPSK IF
QPSK IF
Down Conv.
[IC6101]
SAW filter
[F6101]
SAW filter
[F6001]
IF Amp
[IC6002]
SAW filter
[F6007]
IF Amp
[IC6003]
EEPROM
64Kbit
[IC6903]
BCM3517
KQLGB0-K
[IC6201]
TS0
I2S
256Fs
Audio A/D
[IC7101]
Audio L/R in
From AV_SW
ITU-R656
VDEC
[IC7001]
CVBS in
I2C2
SDRAM
[IC7002]
16Mbit
Video out for monitor (Y, C)
Audio L/R for monitor
Audio L/R for PANEL (16bit)
To AV_SW
Digital Video out
To Digital Selecter

4.12 FUKUGO BLOCK POWER LINE BLOCK DIAGRAM



4.13 POWER SUPPLY UNIT



4.14 VOLTAGES

TANSHI Assy — MTB MAIN Assy

CN8802(AKM1349- -TBB)(T2)		Voltage	CN4004(AKM1349- -TBB)(M7)	
No.	Name	(V)	Name	No.
1	INPUT2_PR	2.5	INPUT2_PR	50
2	GND	0	GND	49
3	INPUT2_PB	2.5	INPUT2_PB	48
4	GND	0	GND	47
5	INPUT2_Y	2.5	INPUT2_Y	46
6	GND	0	GND	45
7	INPUT2_PLUG	2.5	INPUT2_PLUG	44
8	GND	0	GND	43
9	INPUT3_PR	2.5	INPUT3_PR	42
10	GND	0	GND	41
11	INPUT3_PB	2.5	INPUT3_PB	40
12	GND	0	GND	39
13	INPUT3_Y	2.5	INPUT3_Y	38
14	GND	0	GND	37
15	INPUT6_L	4.6	INPUT6_L	36
16	GND	0	GND	35
17	INPUT6_R	4.6	INPUT6_R	34
18	GND	0	GND	33
19	INPUT5_L	4.6	INPUT5_L	32
20	GND	0	GND	31
21	INPUT5_R	4.6	INPUT5_R	30
22	GND	0	GND	29
23	INPUT3_L	4.6	INPUT3_L	28
24	GND	0	GND	27
25	INPUT3_R	4.6	INPUT3_R	26
26	GND	0	GND	25
27	INPUT1_V	2.6	INPUT1_V	24
28	GND	0	GND	23
29	INPUT1_SC	2.1	INPUT1_SC	22
30	INPUT1_S2	0.2	INPUT1_S2	21
31	INPUT1_SPLUG	4.9	INPUT1_SPLUG	20
32	INPUT1_SY	2.6	INPUT1_SY	19
33	GND	0	GND	18
34	INPUT2_V	2.6	INPUT2_V	17
35	GND	0	GND	16
36	INPUT2_SC	2.1	INPUT2_SC	15
37	INPUT2_S2	0.2	INPUT2_S2	14
38	INPUT2_SPLUG	4.7	INPUT2_SPLUG	13
39	INPUT2_SY	2.3	INPUT2_SY	12
40	GND	0	GND	11
41	GND	0	GND	10
42	GND	0	GND	9
43	GND	0	GND	8
44	GND	0	GND	7
45	GND	0	GND	6
46	GND	0	GND	5
47	TEMP_2	2.2	TEMP_2	4
48	V+9V_A	9.2	V+9V_A	3
49	V+9V_A	9.2	V+9V_A	2
50	V+3.3V_UCOM	3.3	V+3.3V_UCOM	1

TANSHI Assy — MTB MAIN Assy

CN8803(AKM1348- -TBB)(T1)		Voltage	CN4005(AKM1348- -TBB)(M6)	
No.	Name	(V)	Name	No.
1	MON_OUT_V	1.5	MON_OUT_V	40
2	GND	0	GND	39
3	INPUT1_L	4.5	INPUT1_L	38
4	GND	0	GND	37
5	INPUT1_R	4.1	INPUT1_R	36
6	GND	0	GND	35
7	INPUT2_L	4.5	INPUT2_L	34
8	GND	0	GND	33
9	INPUT2_R	4.5	INPUT2_R	32
10	GND	0	GND	31
11	SW_OUT	0.5	SW_OUT	30
12	GND	0	GND	29
13	MON_OUT_L	0.7	MON_OUT_L	28
14	GND	0	GND	27
15	MON_OUT_R	1	MON_OUT_R	26
16	GND	0	GND	25
17	REM_B	4.8	REM_B	24
18	SR_IN	4.8	SR_IN	23
19	TXD_SR4	3.2	TXD_SR4	22
20	RXD_SR4	3.2	RXD_SR4	21
21	GND	0	GND	20
22	PC_LCH	4.6	PC_LCH	19
23	GND	0	GND	18
24	PC_RCH	4.6	PC_RCH	17
25	GND	0	GND	16
26	GND	0	GND	15
27	V+5V_A	4.9	V+5V_A	14
28	INPUT4_PLUG	4.9	INPUT4_PLUG	13
29	GND	0	GND	12
30	INPUT4_Y	2.5	INPUT4_Y	11
31	GND	0	GND	10
32	INPUT4_PB	2.5	INPUT4_PB	9
33	GND	0	GND	8
34	INPUT4_PR	2.5	INPUT4_PR	7
35	GND	0	GND	6
36	INPUT4_V	2.5	INPUT4_V	5
37	GND	0	GND	4
38	INPUT4_L	4.5	INPUT4_L	3
39	GND	0	GND	2
40	INPUT4_R	4.5	INPUT4_R	1

POD Assy			MTB MAIN Ass'y	
CN9002(AKM1348- -TBB)(C1)(		Voltage	CN7301(AKM1354- -TFB)(M11	
No.	Name	(V)	Name	No.
1	GND	0	GND	1
2	GND	0	GND	2
3	MD3	0	MD3	3
4	CD1A	3.3	CD1A	4
5	MD4	3.3	MD4	5
6	MDOA3	0	MDOA3	6
7	MD5	0	MD5	7
8	MDOA4	0	MDOA4	8
9	MD6	3.3	MD6	9
10	MDOA5	0	MDOA5	10
11	MD7	3.3	MD7	11
12	MDOA6	0	MDOA6	12
13	CE1A	3.3	CE1A	13
14	MDOA7	0	MDOA7	14
15	MA10	0	MA10	15
16	CE2A	3.3	CE2A	16
17	OE	3.3	OE	17
18	POD_VS1	3.3	POD_VS1	18
19	MA11	0	MA11	19
20	IORD	3.3	IORD	20
21	POB_DATA	0	POB_DATA	21
22	IOWR	3.3	IOWR	22
23	GND	0	GND	23
24	POB_CLK	3.3	POB_CLK	24
25	GND	0	GND	25
26	MISTRTA	0	MISTRTA	26
27	MA13	3.3	MA13	27
28	MDIA0	0	MDIA0	28
29	GND	0	GND	29
30	MOCLKA	0	MOCLKA	30
31	GND	0	GND	31
32	MDIA1	0	MDIA1	32
33	WE	3.3	WE	33
34	MDIA2	0	MDIA2	34
35	RDY/IRQA	3.3	RDY/IRQA	35
36	MDIA3	0	MDIA3	36
37	VCC	3.3	VCC	37
38	VCC	3.3	VCC	38
39	VCC	3.3	VCC	39
40	GND	0	GND	40

POD Assy			MTB MAIN Assy	
CN9001(AKM1348- -TBB)(C2)		Voltage	CN7302(AKM1354- -TFB)(M12)	
No.	Name	(V)	Name	No.
1	GND	0	GND	1
2	GND	0	GND	2
3	VPP	3.3	VPP	3
4	VPP	3.3	VPP	4
5	MIVALA	0	MIVALA	5
6	MDIA4	0	MDIA4	6
7	GND	0	GND	7
8	MICLKA	0	MICLKA	8
9	GND	0	GND	9
10	MDIA5	0	MDIA5	10
11	MA12	0	MA12	11
12	MDIA6	0	MDIA6	12
13	TX_Q	0	TX_Q	13
14	MDIA7	0	MDIA7	14
15	TX_EN	0	TX_EN	15
16	POD_VS2	3.3	POD_VS2	16
17	YX_I	3.3	YX_I	17
18	RSTA	0	RSTA	18
19	OOB_EN	0	OOB_EN	19
20	WAITA	3.3	WAITA	20
21	MA3	0	MA3	21
22	DSUB_DET	0	DSUB_DET	22
23	MA2	0	MA2	23
24	REG	3.3	REG	24
25	MA1	3.3	MA1	25
26	MOVALA	0	MOVALA	26
27	MA0	0	MA0	27
28	MOSTRTA	0	MOSTRTA	28
29	MDO	0	MDO	29
30	MDOA0	0	MDOA0	30
31	MD1	0	MD1	31
32	MDOA1	3.3	MDOA1	32
33	MD2	3.3	MD2	33
34	MDOA2	0	MDOA2	34
35	WE_ROM	0	WE_ROM	35
36	CD2A	3.3	CD2A	36
37	GND	0	GND	37
38	V+3.3V_UCOM	3.4	V+3.3V_UCOM	38
39	TEMP2_P	2.2	TEMP2_P	39
40	GND	0	GND	40

POD Assy			MTB MAIN Assy	
CN9003(CKS3826-) (C3)		Voltage	CN4013(AKM1233- -TBB)(M10	
No.	Name	(V)	Name	No.
12	PC_H	0	PC_H	12
11	PC_V	0	PC_V	11
10	GND	0	GND	10
9	PC_B	2.4*	PC_B	9
8	GND	0	GND	8
7	PC_G	2.4*	PC_G	7
6	GND	0	GND	6
5	PC_R	2.4*	PC_R	5
4	GND	0	GND	4
3	V+5V_A	5	V+5V_A	3
2	GND	0	GND	2
1	V+9V_A	9.2	V+9V_A	1

* When PC signal is not inputted.

AUDIO Assy — MTB MAIN Assy

CN3752(KM200NA11) (A2)		Voltage	CN4007(KM200NA11) (M9)	
No.	Name	(V)	Name	No.
11	PSW_A	2.8	PSW_A	11
10	SDA_AU	3.4	SDA_AU	10
9	SCL_AU	3.4	SCL_AU	9
8	A_MUTE	0	A_MUTE	8
7	A_STBY_B	3.3	A_STBY_B	7
6	GND	0	GND	6
5	AUDIO_R	0	AUDIO_R	5
4	GND	0	GND	4
3	AUDIO_L	0	AUDIO_L	3
2	GND	0	GND	2
1	A_NG_B	2.8	A_NG_B	1

60 IR Assy/SIDE KEY Assy — MTB MAIN Assy (M8)

CN9801(RE1) / CN9501(SW1)			Voltage	CN4010(KM200NA7)	
No.	Connector	Name	(V)	Name	No.
2	CN9801	REM	0	REM	7
6	CN9801	GND	0	GND	6
1	CN9801	V+5.1V_STB	5	V+5.1V_STB	5
4	CN9501	V+3.3V_STB	3.4	V+3.3V_STB	4
3	CN9501	KEY_AD1	3.4	KEY_AD1	3
2	CN9501	KEY_AD2	3.4	KEY_AD2	2
1	CN9501	GND	0	GND	1

42 & 60 LED Assy — MTB MAIN Assy (M5)

CN9601(L1)		Voltage	CN4006(KM200NA6)	
No.	Name	(V)	Name	No.
1	LED-	0.2	LED-	1
2	LED_ON	3.4	LED_ON	2
3	LED_OFF	0	LED_OFF	3
4	LED_REC	0	LED_REC	4
5	LED_MDM	0	LED_MDM	5
6	LED-	0.2	LED-	6

POWER SUPPLY UNIT — MTB MAIN Assy

P8(B13B-PH-K-S)		Voltage	CN4002(KM200NA13) (M2)	
No.	Name	(V)	Name	No.
1	V+6.5V	6.9	V+6.5V	1
2	GND	0	GND	2
3	V+12V	12.2	V+12V	3
4	GND	0	GND	4
5	V+16.5V	17.3	V+16.5V	5
6	GND	0	GND	6
7	V+5_1V	5.1	V+5_1V	7
8	V+5_1V	5.1	V+5_1V	8
9	V+5_1V	5.1	V+5_1V	9
10	V+5_1V	5.1	V+5_1V	10
11	GND	0	GND	11
12	GND	0	GND	12
13	GND	0	GND	13

POWER SUPPLY UNIT — MTB MAIN Assy

P9(B11B-PH-K-S)		Voltage	CN4008(KM200NA11) (M3)	
No.	Name	(V)	Name	No.
1	M_SW_DET	3.2	M_SW_DET	1
2	AC_DET	2.9	AC_DET	2
3	N.C.	3.35	N.C.(RELAY)	3
4	GND-D	0	GND	4
5	STB3.3V	3.3	V+3.3V_STB	5
6	GND-D	0	GND	6
7	STBY5.1V	5.1	V+5.1V_STB	7
8	GND-D	0	GND	8
9	+35V	37.3	V+35V	9
10	GND-D	0	GND	10
11	US-SW	2.3	US-SW	11

FAN — MTB MAIN Assy

		Voltage	CN4009(AKM1274- -TBB)(M4)	
No.	Name	(V)	Name	No.
		7.7/11	FAN_VCC	1
		0	FAN_NG1	2
		0	GND	3

TRAP-SW — MTB MAIN Assy

		Voltage	CN4018(AKM1213- -TFB)(M13)	
No.	Name	(V)	Name	No.
		3.3	TRAP_SW	1
			NC	2
		3.3	V+3_3V_UCOM	3

USB — MTB MAIN Assy

		Voltage	CN7101(AKM1276- -TBB)(M16)	
No.	Name	(V)	Name	No.
		5.0	VBUS	1
		0	D-	2
		0	D+	3
		0	GND	4
		0	SHILD	5

■60 DIGITAL ASSY

CN3001 (D11) ↔ MAIN ASSY CN4001 (M1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	GND	–	GND	–	–
2	V+3.3V_UCOM2	I	Power supply for module microcomputer	3.3	TP3002
3	INP_MUTE	O	Output bufffer control signal of MAIN assy	0	TP3017
4	THEATER	I	Control signal for pure cinema	0	TP3021
5	VD	I	Vertical synchronized signal	0 to 3.3	TP3037
6	HD	I	Horizontal synchronized signal	0 to 3.3	TP3036
7	DE	I	Data enable signal	0 to 3.3	TP3035
8	GND	–	GND	–	–
9	CLK	I	Data clock signal	0 to 3.3	TP3034
10	GND	–	GND	–	–
11	GND	–	GND	–	–
12	VIDEO_R9	I	10 bit video signal input (RED)	0 to 3.3	TP3059
13	VIDEO_R8	I	10 bit video signal input (RED)	0 to 3.3	TP3058
14	VIDEO_R7	I	10 bit video signal input (RED)	0 to 3.3	TP3057
15	VIDEO_R6	I	10 bit video signal input (RED)	0 to 3.3	TP3056
16	VIDEO_R5	I	10 bit video signal input (RED)	0 to 3.3	TP3055
17	VIDEO_R4	I	10 bit video signal input (RED)	0 to 3.3	TP3054
18	VIDEO_R3	I	10 bit video signal input (RED)	0 to 3.3	TP3053
19	VIDEO_R2	I	10 bit video signal input (RED)	0 to 3.3	TP3052
20	VIDEO_R1	I	10 bit video signal input (RED)	0 to 3.3	TP3051
21	VIDEO_R0	I	10 bit video signal input (RED)	0 to 3.3	TP3050
22	GND	–	GND	–	–
23	VIDEO_G9	I	10 bit video signal input (GREEN)	0 to 3.3	TP3069
24	VIDEO_G8	I	10 bit video signal input (GREEN)	0 to 3.3	TP3068
25	VIDEO_G7	I	10 bit video signal input (GREEN)	0 to 3.3	TP3067
26	VIDEO_G6	I	10 bit video signal input (GREEN)	0 to 3.3	TP3066
27	VIDEO_G5	I	10 bit video signal input (GREEN)	0 to 3.3	TP3065
28	VIDEO_G4	I	10 bit video signal input (GREEN)	0 to 3.3	TP3064
29	VIDEO_G3	I	10 bit video signal input (GREEN)	0 to 3.3	TP3063
30	VIDEO_G2	I	10 bit video signal input (GREEN)	0 to 3.3	TP3062
31	VIDEO_G1	I	10 bit video signal input (GREEN)	0 to 3.3	TP3061
32	VIDEO_G0	I	10 bit video signal input (GREEN)	0 to 3.3	TP3060
33	GND	–	GND	–	–
34	VIDEO_B9	I	10 bit video signal input (BLUE)	0 to 3.3	TP3079
35	VIDEO_B8	I	10 bit video signal input (BLUE)	0 to 3.3	TP3078
36	VIDEO_B7	I	10 bit video signal input (BLUE)	0 to 3.3	TP3077
37	VIDEO_B6	I	10 bit video signal input (BLUE)	0 to 3.3	TP3076
38	VIDEO_B5	I	10 bit video signal input (BLUE)	0 to 3.3	TP3075
39	VIDEO_B4	I	10 bit video signal input (BLUE)	0 to 3.3	TP3074
40	VIDEO_B3	I	10 bit video signal input (BLUE)	0 to 3.3	TP3073
41	VIDEO_B2	I	10 bit video signal input (BLUE)	0 to 3.3	TP3072
42	VIDEO_B1	I	10 bit video signal input (BLUE)	0 to 3.3	TP3071
43	VIDEO_B0	I	10 bit video signal input (BLUE)	0 to 3.3	TP3070
44	GND	–	GND	–	–
45	RESERVE (N.C.)	–	Reserve	–	TP3039
46	AC_OFF (N.C.)	O	AC state input	0	TP3020
47	TXD_MD	O	UART communication with MAIN u-com	0 to 3.3	TP3166
48	RXD_MD	I	UART communication with MAIN u-com	0 to 3.3	TP3163
49	REQ_MD	O	Communication demand to main system	0 to 3.3	TP3016
50	MODE	O	Detection of MAIN Assy connection	0	–

CN3151 (D24) ↔ SENSOR ASSY CN3651 (TE1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+3.3V_EEP	O	Power supply output for memory	3.3	TP3159
2	E_SCL	O	IIC communication clock signal	0 to 3.3	TP3168
3	E_SDA	O	IIC communication data signal	0 to 3.3	TP3169
4	TEMP1	I	Panel temperature sensor signal	0.8	TP3161
5	GND	–	GND	–	–

CN3601 (D21) ↔ POWER SUPPLY UNIT (P4)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+12V	I	+12 V power supply input	12	TP3505
2	V+12V	I	+12 V power supply input	12	TP3506
3	GND	–	GND	–	TP3608
4	GND	–	GND	–	–
5	V+3.3V_STB	I	STB3.3 V power supply input	3.3	TP3638
6	GND	–	GND	–	–
7	M_SW_DET	I	Mechanism switch detection signal input	3.3	TP3639
8	EXT_PD	O	Power down signal	0	TP3632
9	VSUS_ADJ	O	VSUS power supply adjustment signal	1.7	TP3633
10	PS_PD	I	Power supply PD signal	0	TP3634
11	RELAY	O	Relay control	3.3	TP3626
12	DRF_B	O	Large power supply ON/OFF control signal	3.3	TP3616
13	AC_DET	I	AC power supply state input	3.3	TP3635
14	PD_TRG_B	I	Power down trigger signal	3.3	TP3636

CN3501 (D5) ↔ 60 ADDRESS L ASSY CN1602 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	TP3501
3	NC	–	Non connection	–	–
4	GND	–	GND	–	–
5	NC	–	Non connection	–	–
6	NC	–	Non connection	–	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3.3 V power supply output	3.3	–
36	V+3V_D	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV_1	O	Data output timing control	3.3	–
39	DIV_0	O	Data output timing control	0	–
40	GND	–	GND	–	–

CN3502 (D6) ↔ 60 ADDRESS S ASSY CN1802 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	TP3502
3	NC	–	Non connection	–	–
4	GND	–	GND	–	–
5	NC	–	Non connection	–	–
6	NC	–	Non connection	–	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3.3 V power supply output	3.3	–
36	V+3V_D	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV_1	O	Data output timing control	0	–
39	DIV_0	O	Data output timing control	3.3	–
40	GND	–	GND	–	–

CN3503 (D7) ↔ 60 ADDRESS S ASSY CN1802 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	TP3503
3	NC	–	Non connection	–	–
4	GND	–	GND	–	–
5	NC	–	Non connection	–	–
6	NC	–	Non connection	–	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3.3 V power supply output	3.3	–
36	V+3V_D	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV_1	O	Data output timing control	0	–
39	DIV_0	O	Data output timing control	0	–
40	GND	–	GND	–	–

CN3504 (D8) ↔ 60 ADDRESS L ASSY CN1602 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	TP3504
3	NC	–	Non connection	–	–
4	GND	–	GND	–	–
5	NC	–	Non connection	–	–
6	NC	–	Non connection	–	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3.3 V power supply output	3.3	–
36	V+3V_D	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV_1	O	Data output timing control	3.3	–
39	DIV_0	O	Data output timing control	0	–
40	GND	–	GND	–	–

CN3507 (D16) ↔ 60 ADDRESS L ASSY CN1602 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	TP3520
3	NC	–	Non connection	–	–
4	GND	–	GND	–	–
5	NC	–	Non connection	–	–
6	NC	–	Non connection	–	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3.3 V power supply output	3.3	–
36	V+3V_D	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV_1	O	Data output timing control	3.3	–
39	DIV_0	O	Data output timing control	0	–
40	GND	–	GND	–	–

CN3508 (D17) ↔ 60 ADDRESS S ASSY CN1802 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	TP3521
3	NC	–	Non connection	–	–
4	GND	–	GND	–	–
5	NC	–	Non connection	–	–
6	NC	–	Non connection	–	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3.3 V power supply output	3.3	–
36	V+3V_D	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV_1	O	Data output timing control	0	–
39	DIV_0	O	Data output timing control	3.3	–
40	GND	–	GND	–	–

CN3509 (D18) ↔ 60 ADDRESS S ASSY CN1802 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	TP3522
3	NC	–	Non connection	–	–
4	GND	–	GND	–	–
5	NC	–	Non connection	–	–
6	NC	–	Non connection	–	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3.3 V power supply output	3.3	–
36	V+3V_D	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV_1	O	Data output timing control	0	–
39	DIV_0	O	Data output timing control	0	–
40	GND	–	GND	–	–

CN3510 (D19) ↔ 60 ADDRESS L ASSY CN1602 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	TP3522
3	NC	–	Non connection	–	–
4	GND	–	GND	–	–
5	NC	–	Non connection	–	–
6	NC	–	Non connection	–	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3.3 V power supply output	3.3	–
36	V+3V_D	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV_1	O	Data output timing control	3.3	–
39	DIV_0	O	Data output timing control	0	–
40	GND	–	GND	–	–

60 DIGITAL ASSY		60 X DRIVE ASSY
D9 : CN505 (AKM1348)	⇔	X1: CN1001 (AKM1348)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function	TP
1	XDD_PD	0	XDD_PD	40	X DRIVE PD signal input	TP3513
2	NC	-	NC	39	Non-connection termial	
3	DGND	0	DGND	38	GND	
4	XSUS-B	0 to 3.3	XSUS-B	37	X DRIVE control signal output	
5	DGND	0	DGND	36	GND	
6	XSUS-U	0 to 3.3	XSUS-U	35	X DRIVE control signal output	
7	DGND	0	DGND	34	GND	
8	XSUS-D	0 to 3.3	XSUS-D	33	X DRIVE control signal output	
9	DGND	0	DGND	32	GND	
10	XSUS-G	0 to 3.3	XSUS-G	31	X DRIVE control signal output	
11	DGND	0	DGND	30	GND	
12	XNR-D	0 to 3.3	XNR-D	29	X DRIVE control signal output	
13	DGND	0	DGND	28	GND	
14	XSUS-MSK	0 to 3.3	XSUS-MSK	27	X DRIVE control signal output	
15	DGND	0	DGND	26	GND	
16	SUS_MUTE	0	SUS_MUTE	25	X DRIVE mute signal input	
17	DGND	0	DGND	24	GND	
18	XDRV_PD	0	XDRV_PD	23	X DRIVE PD signal input	TP3514
19	DGND	0	DGND	22	GND	
20	XResv2	-	XResv2	21	X DRIVE control signal output (Reserve)	
21	XResv3	-	XResv3	20	X DRIVE control signal output (Reserve)	
22	XResv4	-	XResv4	19	X DRIVE control signal output (Reserve)	
23	DGND	0	DGND	18	GND	
24	PSW2	0	PSW2	17	Function standby control signal	TP3516
25	NC	-	NC	16	Non-connection termial	
26	NC	-	NC	15	Non-connection termial	
27	NC	-	NC	14	Non-connection termial	
28	NC	-	NC	13	Non-connection termial	
29	NC	-	NC	12	Non-connection termial	
30	NC	-	NC	11	Non-connection termial	
31	NC	-	NC	10	Non-connection termial	
32	NC	-	NC	9	Non-connection termial	
33	NC	-	NC	8	Non-connection termial	
34	NC	-	NC	7	Non-connection termial	
35	NC	-	NC	6	Non-connection termial	
36	NC	-	NC	5	Non-connection termial	
37	NC	-	NC	4	Non-connection termial	
38	DRF_SW	3.3	DRF_SW	3	DRIVE OFF signal input	TP3623
39	NC	-	NC	2	Non-connection termial	
40	XSUS_PD	0	XSUS_PD	1	X DRIVE PD signal input	TP3515

60 DIGITAL ASSY		60 Y DRIVE ASSY
D10 : CN3506 (AKM1348)	⇔	Y1: CN2001 (AKM1348)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function	
1	SCN5V_PD	0	SCN5V_PD	40	Y DRIVE PD signal input	TP3507
2	NC	-	NC	39	Non-connection termial	
3	CLK_H	0 to 3.3	CLK1	38	SCAN control signal output	
4	SI_H	0 to 3.3	SI_H	37	SCAN control signal output	
5	SI_L	0 to 3.3	SI_L	36	SCAN control signal output	
6	DGND	0	DGND	35	GND	
7	CLR	0 to 3.3	CLR	34	SCAN control signal output	
8	CLK_L	0 to 3.3	CLK2	33	SCAN control signal output	
9	DGND	0	DGND	32	GND	
10	LE	0 to 3.3	LE	31	SCAN control signal output	
11	OC2_U	0 to 3.3	OC2_U	30	SCAN control signal output	
12	OC1(-1)	0 to 3.3	OC1	29	SCAN control signal output	
13	DGND	0	DGND	28	GND	
14	YSUS-B	0 to 3.3	YSUS-B	27	Y DRIVE control signal output	
15	YSUS-U	0 to 3.3	YSUS-U	26	Y DRIVE control signal output	
16	DGND	0	DGND	25	GND	
17	YSUS-D	0 to 3.3	YSUS-D	24	Y DRIVE control signal output	
18	YSUS-G	0 to 3.3	YSUS-G	23	Y DRIVE control signal output	
19	DGND	0	DGND	22	GND	
20	YPR-U	0 to 3.3	YPR-U	21	Y DRIVE control signal output	TP3508
21	SUS_MUTE	0	SUS_MUTE	20	Y DRIVE mute signal output	
22	DGND	0	DGND	19	GND	
23	YSUS-MSK	0 to 3.3	YSUS-MSK	18	Y DRIVE control signal output	
24	YNRST	0 to 3.3	YNRST	17	Y DRIVE control signal output	
25	YRSV2	-	YRSV2	16	Y DRIVE control signal output (Reserve)	
26	DGND	0	DGND	15	GND	
27	YENOFS	0 to 3.3	YNOFS	14	Y DRIVE control signal output	
28	YRSV3	-	YRSV3	13	Y DRIVE control signal output (Reserve)	
29	YSOFT-D	0 to 3.3	YSOFT-D	12	Y DRIVE control signal output	
30	OC2_D	0 to 3.3	OC2_D	11	SCAN control signal output	
31	DGND	0	DGND	10	GND	
32	VOFS_ADJ	1.85	VOFS_ADJ	9	Vofs offset adjustment signal output	TP3181
33	VYPRST_ADJ	1.21	VYPRST_ADJ	8	Reset voltage adjustment signal output	TP3182
34	DGND	0	DGND	7	GND	
35	PSW2	0	PSW2	6	Function standby control signal	TP3516
36	SCAN_PD	0	SCAN_PD	5	Y DRIVE PD signal input	TP3509
37	YDD_PD	0	YDD_PD	4	Y DRIVE PD signlal input	TP3510
38	YSUS_PD	0	YSUS_PD	3	Y DRIVE PD signlal input	TP3511
39	NC	-	NC	2	Non-connection termial	
40	YDRV_PD	0	YDRV_PD	1	Y DRIVE PD signal input	TP3512

60 Y DRIVE ASSY — Y6: CN2354 (AKM1281), Y8: CN2356 (AKM1281)

60 ADDRESS L/S ASSY — AD2: CN1801 (AKM1291), AD2: CN1601 (AKM1291)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	GND_D	0	GND_D	1	GND
2	5V	5	5V	2	5V power supply
3	8V	8	8V	3	8V power supply
4	GND_ADR	0	GND_ADR	4	GND
5	+60V	60	+60V	5	60V power supply
6	+60V	60	+60V	1	60V power supply
7	GND_ADR	0	GND_ADR	2	GND
8	8V	8	8V	3	8V power supply
9	5V	5	5V	4	5V power supply
10	GND_D	0	GND_D	5	GND

60 Y DRIVE ASSY — Y2: CN2402 (AKM1200)

607 SCAN B ASSY — SB1: CN2901 (AKP1261)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	VH	130	VH	1	Power supply for VH
2	VH	130	VH	2	Power supply for VH
3	NC	-	NC	3	Non-connection termial
4	NC	-	NC	4	Non-connection termial
5	NC	-	NC	5	Non-connection termial
6	GNDH	-60 ～ 300	GNDH	6	GND(PSUS)
7	SI_H	-60 ～ 300	SI_H	7	SI_H signal
8	CLR	-60 ～ 300	CLR	8	CLR signal
9	OC2	-60 ～ 300	OC2	9	OC2 signal
10	OC1	-60 ～ 300	OC1	10	OC1 signal
11	CLK1	-60 ～ 300	CLK1	11	CLK1 signal
12	LE	-60 ～ 300	LE	12	LE signal
13	GNDH	-60 ～ 300	GNDH	13	GND(PSUS)
14	GNDH_R	-60 ～ 300	GNDH_R	14	GND(PSUS). Connector detection
15	IC5V	-60 ～ 300	IC5V	15	IC5V power supply

60 Y DRIVE ASSY ⟷ **607 SCAN A ASSY**

Y3: CN2401 (AKM1200) ⟷ SA1: CN2801 (AKP1261)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	VH	130	VH	1	Power supply for VH
2	VH	130	VH	2	Power supply for VH
3	NC	-	NC	3	Non-connection termial
4	NC	-	NC	4	Non-connection termial
5	NC	-	NC	5	Non-connection termial
6	GNDH	-60 ～ 300	GNDH	6	GND(PSUS)
7	SI_L	-60 ～ 300	SI_L	7	SI_L signal
8	CLR	-60 ～ 300	CLR	8	CLR signal
9	OC2	-60～300	OC2	9	OC2 signal
10	OC1	-60～300	OC1	10	OC1 signal
11	CLK2	-60～300	CLK2	11	CLK2 signal
12	LE	-60～300	LE	12	LE signal
13	GNDH	-60～300	GNDH	13	GND(PSUS)
14	GNDH_R	-60～300	GNDH_R	14	GND(PSUS).Connector detection
15	IC5V	-60～300	IC5V	15	IC5V power supply

60 Y DRIVE ASSY ⟷ **POWER SUPPLY UNIT**

Y4: CN2351 (B9B-EH) ⟷ P1: (B9B-EH)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	NC	-	NC	1	Non-connection termial
2	+16_5V	16.5	+16_5V	2	16.5V power supply
3	+6_5V	6.5	+6_5V	3	6.5V power supply
4	GND_D	0	GND_D	4	GND
5	GND_SUS	0	GND_SUS	5	GND
6	GND_SUS	0	GND_SUS	6	GND
7	NC	-	NC	7	Non-connection termial
8	VSUS	207	VSUS	8	VSUS power supply
9	VSUS	207	VSUS	9	VSUS power supply

60 Y DRIVE ASSY ⟷ **POWER SUPPLY UNIT**

Y5 : CN2353 (AKM1277) ⟷ P7: (B7B-PH-K-S)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	+60V	60	+60V	1	60V power supply
2	+60V	60	+60V	2	60V power supply
3	NC	-	NC	3	Non-connection termial
4	GND_ADR	0	GND_ADR	4	GND
5	+12V	12	+12V	5	12V power supply
6	GND_D	0	GND_D	6	GND
			NC	7	Non-connection termial

60 X DRIVE ASSY ⟷ **POWER SUPPLY UNIT**

X2: (CN1206 B8B-EH) ⟷ P2: (B8B-EH)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	+16_5V	16.5	+16_5V	1	16.5V power supply
2	+6_5V	6.5	+6_5V	2	6.5V power supply
3	GND_D	0	GND_D	3	GND
4	GND_SUS	0	GND_SUS	4	GND
5	GND_SUS	0	GND_SUS	5	GND
6	NC	-	NC	6	Non-connection termial
7	VSUS	207	VSUS	7	VSUS power supply
8	VSUS	207	VSUS	8	VSUS power supply

60 X DRIVE ASSY X5: CN1204 (AKM1277) ⟷ **POWER SUPPLY UNIT** P6: (B6B-PH-K-S)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	+60V	60	+60V	1	60V power supply
2	+60V	60	+60V	2	60V power supply
3	NC	-	NC	3	Non-connection termial
4	GND_ADR	0	GND_ADR	4	GND
5	+12V	12	+12V	5	12V power supply
6	GND_D	0	GND_D	6	GND

60 X DRIVE ASSY X3: CN1201 (AKM1281), X6: CN1203 (AKM1281) ⟷ **60 ADDRESS L/S ASSY** AD2: CN1601 (AKM1291), AD2: CN1801 (AKM1291)

Pin No.	Name	Voltage [V]	Name	Pin No.	Function
1	GND_D	0	GND_D	1	GND
2	5V	5	5V	2	5V power supply
3	8V	8	8V	3	8V power supply
4	GND_ADR	0	GND_ADR	4	GND
5	+60V	60	+60V	5	60V power supply
6	+60V	60	+60V	1	60V power supply
7	GND_ADR	0	GND_ADR	2	GND
8	8V	8	8V	3	8V power supply
9	5V	5	5V	4	5V power supply
10	GND_D	0	GND_D	5	GND

AUDIO ASSY CN3752 (A2) ↔ MAIN ASSY CN4007 (M9)

Pin No.	Pin Name	I/O	Function	Remarks
1	A_NG_B	O	DC detection, disconnection of cable detection	L : Abnormal, H : Normal
2	GND	–	GND for small signal	–
3	AUDIO_L	I	Small signal L ch	–
4	GND	–	GND for small signal	–
5	AUDIO_R	I	Small signal R ch	–
6	GND	–	GND for small signal	–
7	A_STBY_B	I	MUTE ON/OFF signal for LA4625 IC internal circuit	L : Standby, H : ON
8	A_MUTE	I	MUTE ON/OFF signal for LA4625 IC external circuit	L : MUTE OFF, H : MUTE
9	SCL_AU	I	CLK of I2C for NJW1183GK1 IC	–
10	SDA_AU	I/O	DATA of I2C for NJW1183GK1 IC	–
11	PSW_A	I	ON/OFF switch for 12 V regulator IC	L : OFF, H : ON

AUDIO ASSY CN3751 (A1) ↔ POWER SUPPLY UNIT (P5)

Pin No.	Pin Name	I/O	Function	Remarks
1	+16.5V	–	Power supply (16.5 V) for LA4625 IC	–
2	GND_D	–	Return GND for LA4625 IC	–
3	GND_D	–	Return GND for LA4625 IC	–

AUDIO ASSY CN3753 (A3) ↔ SP TERMINAL ASSY CN3901 (SP1)

Pin No.	Pin Name	I/O	Function	Remarks
1	RH+	O	Tweeter output R+	–
2	RL+	O	Woofer output R+ (Speaker output R+)	–
3	RH–	O	Tweeter output R–	–
4	RL–	O	Woofer output R– (Speaker output R–)	–
5	LL+	O	Woofer output L+ (Speaker output L+)	–
6	LH+	O	Tweeter output L+	–
7	LL–	O	Woofer output L– (Speaker output L–)	–
8	LH–	O	Tweeter output L–	–

SIDE KEY ASSY CN9501 (SW1) ↔ MAIN ASSY CN4010 (M8)

Pin No.	Pin Name	I/O	Function	Remarks
1	GND	–	GND	–
2	KEY_AD2	O	KEY voltage 2	–
3	KEY_AD1	O	KEY voltage 1	–
4	V+3.3V_STB	–	Standby 3.3 V power supply	–

42 & 60 LED ASSY CN9601(L1) ↔ MAIN ASSY CN4006 (M5)

Pin No.	Pin Name	I/O	Function	Remarks
1	LED–	–	LED signal return	–
2	LED_ON	I	LED control for power ON	H : LED_ON, L : LED_OFF
3	LED_OFF	I	LED control for standby	H : LED_ON, L : LED_OFF
4	LED_REC	I	LED control for REC	–
5	LED_MDM	I	–	–
6	LED–	–	LED control for standby	–

60 IR ASSY CN9801 (RE1) ↔ MAIN ASSY CN4010 (M8)

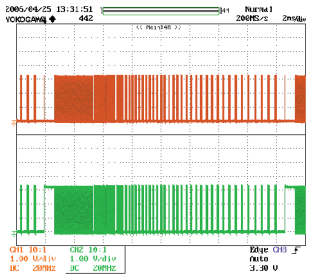
Pin No.	Pin Name	I/O	Function	Remarks
1	V+5.1V_STB	–	Standby 5.1 V power supply	–
2	REM	O	Remote control signal	–
3	NC	–	–	–
4	NC	–	–	–
5	NC	–	–	–
6	GND	–	GND	–

4.15 WAVEFORMS

● 60 ADDRESS ASSY

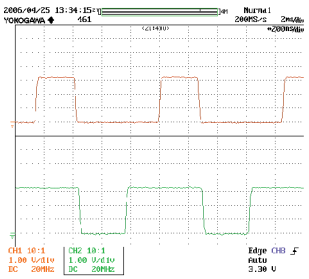
• ADR RESONANCE BLOCK

① input:VIDEO 60Hz
signal : COLOR BAR(MKSS17)
ch1 : ADR_B side-A test plane " B "
ch2 : ADR_D side-A test plane " D "
V : 1V/div H : 2ms/div



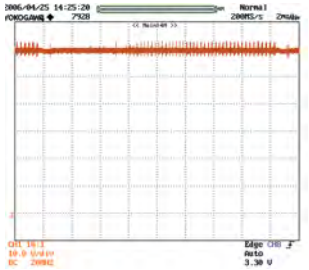
• Control signals of resonance circuit (1 Field)

② input :VIDEO 60Hz
signal : COLOR BAR (MKSS17)
ch1 : ADR_B side-A test plane " B "
ch2 : ADR_D side-A test plane " D "
V : 1V/div H : 200ns/div



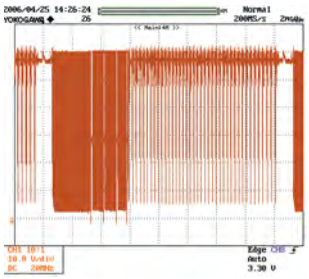
• Control signals of resonance circuit (2SF)

③ input :VIDEO 60Hz
signal :COLOR BAR(MKSS17)
ch1 :L1730(V+ADR1)(side-A through hole)
V : 10V/div H : 2ms/div



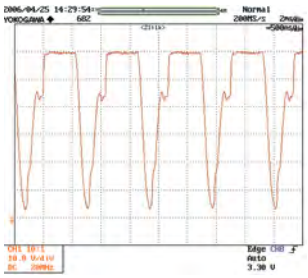
• VADR (1 Field)

④ input :VIDEO 60Hz
signal : Checkered pattern of Black- White (MKSS13)
ch1 : L1730(V+ADR1)(side-A through hole)
V: 10V/div H: 2ms/div



• VADR (1 Field)

⑤ input : VIDEO 60Hz
signal : Checkered pattern of Black- White(MKSS13)
ch1 : L1730(V+ADR1)(side-A through hole)
V: 10V/div H: 500ns/div



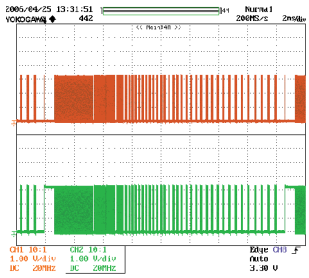
• VADR (2 SF)

4.15 WAVEFORMS

● 60 ADDRESS ASSY

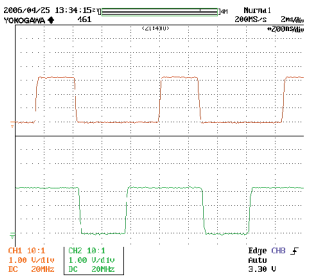
• ADR RESONANCE BLOCK

① input:VIDEO 60Hz
signal : COLOR BAR(MKSS17)
ch1 : ADR_B side-A test plane " B "
ch2 : ADR_D side-A test plane " D "
V : 1V/div H : 2ms/div



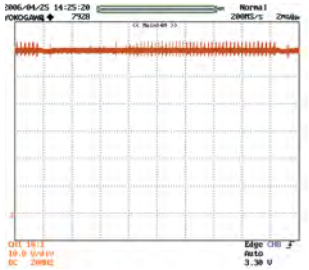
• Control signals of resonance circuit (1 Field)

② input :VIDEO 60Hz
signal : COLOR BAR (MKSS17)
ch1 : ADR_B side-A test plane " B "
ch2 : ADR_D side-A test plane " D "
V : 1V/div H : 200ns/div



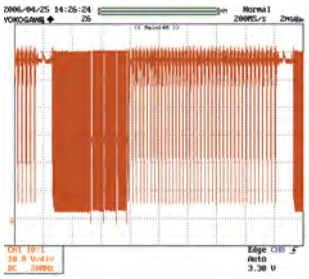
• Control signals of resonance circuit (2SF)

③ input :VIDEO 60Hz
signal :COLOR BAR(MKSS17)
ch1 :L1730(V+ADR1)(side-A through hole)
V : 10V/div H : 2ms/div



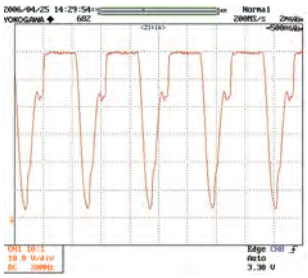
• VADR (1 Field)

④ input :VIDEO 60Hz
signal : Checkered pattern of Black- White (MKSS13)
ch1 : L1730(V+ADR1)(side-A through hole)
V: 10V/div H: 2ms/div



• VADR (1 Field)

⑤ input : VIDEO 60Hz
signal : Checkered pattern of Black- White(MKSS13)
ch1 : L1730(V+ADR1)(side-A through hole)
V: 10V/div H: 500ns/div



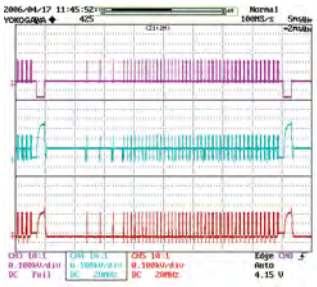
• VADR (2 SF)

● 60 X DRIVE ASSY, 60 Y DRIVE ASSY, 607 SCAN A ASSY, 607 SCAN B ASSY

① ch3 R1222(XPSUS) - K1201(SUSGND)
V : 100V/div H : 2ms/div
(60 X DRIVE Ass'y)

ch4 K2912(ScanOUT) - K2301(SUSGND)
V : 100V/div H : 2ms/div
(607 SCAN B Ass'y HIGHSIDE)

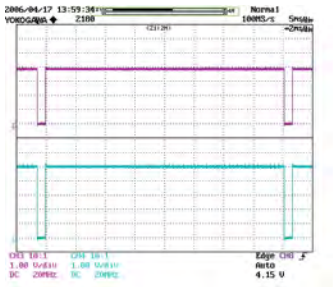
ch5 R2288(YPSUS) - KN2203(SUSGND)
V : 100V/div H : 2ms/div
(60 Y DRIVE Ass'y)



② ch3 K1012(XSUS-MSK) - K1002(DGND)
V : 1V/div H : 2ms/div

ch4 K1008(XNR-D) - K1002(DGND)
V : 1V/div H : 2ms/div

(60 X DRIVE Ass'y)



③ ch1 K2007(YNOFS) - K2014(DGND)
V : 1V/div H : 2ms/div

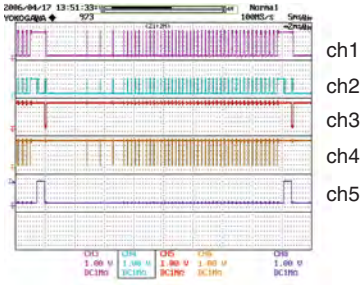
ch2 K2005(YSUS-MSK) - K2014(DGND)
V : 1V/div H : 2ms/div

ch3 K2004(YNRST) - K2014(DGND)
V : 1V/div H : 2ms/div

ch4 K2003(SOFT-D) - K2014(DGND)
V : 1V/div H : 2ms/div

ch5 K2010(YPR-U) - K2014(DGND)
V : 1V/div H : 2ms/div

(60 Y DRIVE Ass'y)



④ ch1 R2401(LE) - K2014(DGND)
V : 1V/div H : 2ms/div

ch2 R2404(CLK2) - K2014(DGND)
V : 1V/div H : 2ms/div

ch3 R2406(SI_L) - K2014(DGND)
V : 1V/div H : 2ms/div

ch4 R2409(CLR) - K2014(DGND)
V : 1V/div H : 2ms/div

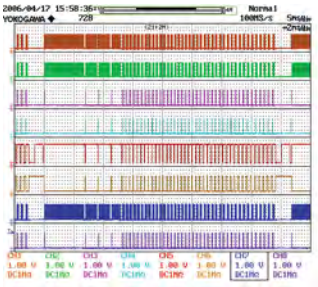
ch5 R2411(OC2_U) - K2014(DGND)
V : 1V/div H : 2ms/div

ch6 R2415(OC1) - K2014(DGND)
V : 1V/div H : 2ms/div

ch7 R2418(CLK1) - K2014(DGND)
H : 2ms/div

ch8 R2420(SI_H) - K2014(DGND)
H : 2ms/div

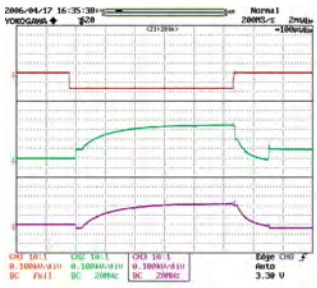
(60 Y DRIVE Ass'y)



⑤ ch1 R1222(XPSUS) - K1201(SUSGND)
V : 100V/div H : 100us/div
(60 X DRIVE Ass'y)

ch2 K2912(ScanOUT) - K2301(SUSGND)
V : 100V/div H : 100us/div
(607 SCAN B Ass'y HIGHSIDE)

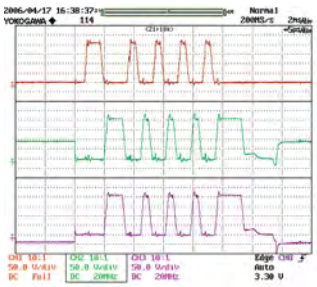
ch3 F2301(YPSUS) - KN2206(SUSGND)
V : 100V/div H : 100us/div
(60 Y DRIVE Ass'y)



⑥ ch1 R1222(XPSUS) - K1202(SUSGND)
V : 50V/div H : 5us/div
(60 X DRIVE Ass'y)

ch2 K2912(ScanOUT) - K2301(SUSGND)
V : 50V/div H : 5us/div
(607 SCAN A Ass'y LOWSIDE)

ch3 F2301(YPSUS) - K2301(SUSGND)
V : 50V/div H : 5us/div
(60 Y DRIVE Ass'y)



⑦ ch1 F2301(YPSUS) - K2301(SUSGND)
V : 50V/div H : 500ns/div

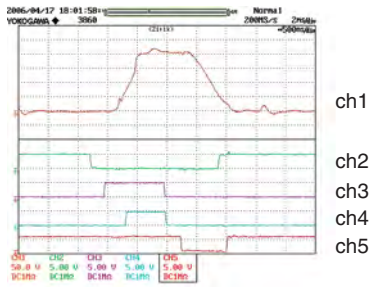
ch2 K2002(YSUS-G) - K2014(DGND)
V : 5V/div H : 500ns/div

ch3 K2013(YSUS-U) - K2014(DGND)
V : 5V/div H : 500ns/div

ch4 K2011(YSUS-B) - K2014(DGND)
V : 5V/div H : 500ns/div

ch5 K2012(YSUS-D) - K2014(DGND)
V : 5V/div H : 500ns/div

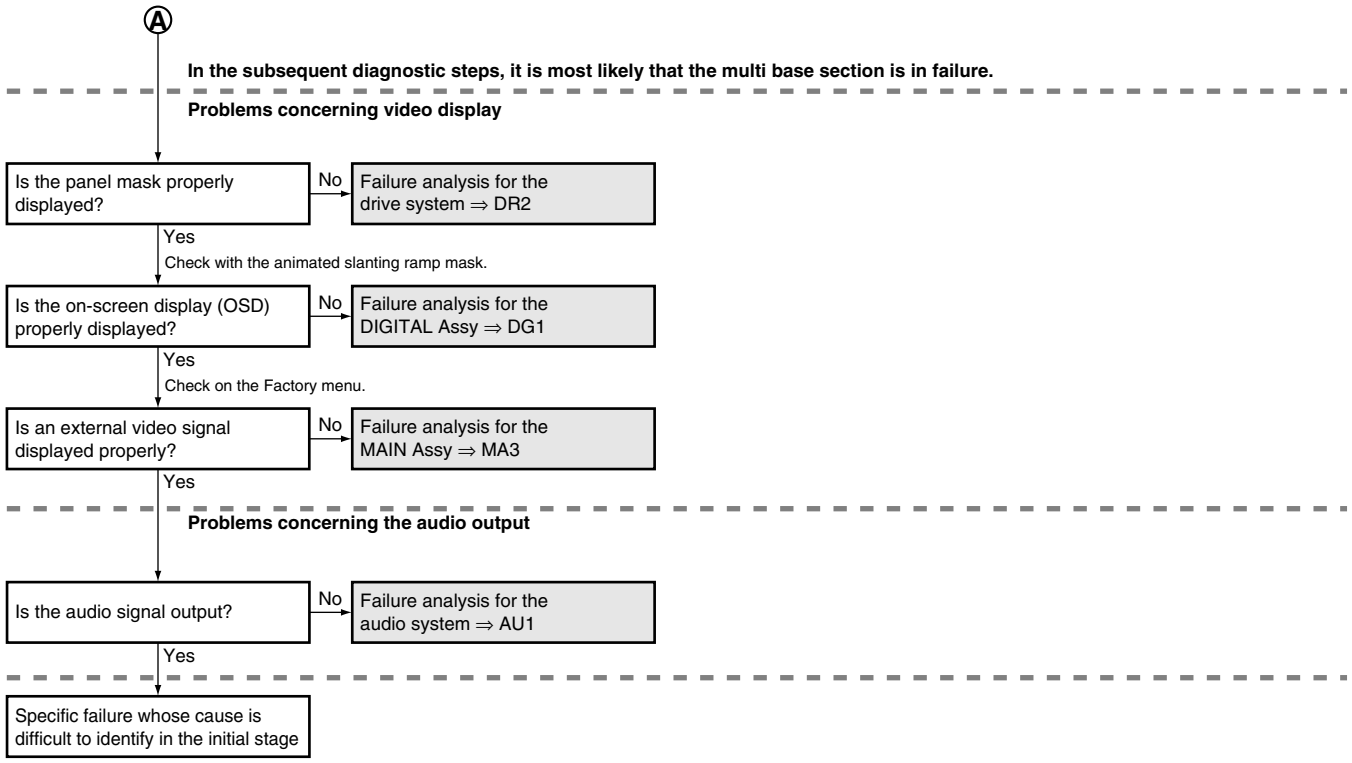
(60 Y DRIVE Ass'y)



5. DIAGNOSIS INFORMATION
5.1 THE FLOW OF DIAGNOSIS
5.1.1 FLOWCHART OF FAILURE ANALYSIS FOR THE WHOLE UNIT

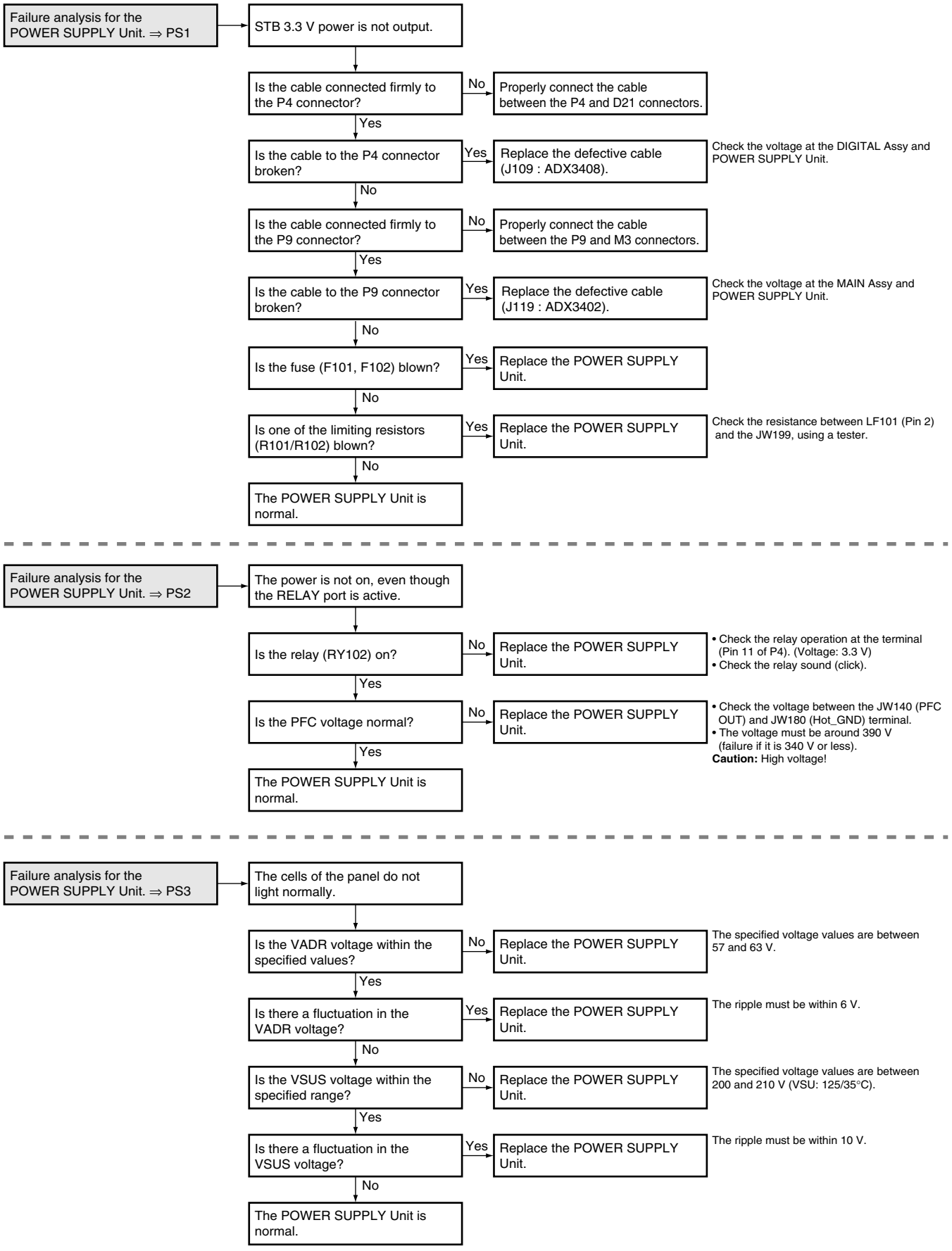
Flowchart of Failure Analysis for The Whole Unit

START
Problems concerning STB status
Is the STB LED lit?
No
Is STB 3.3 V power supplied? (Check the power at the IF micro-computer on the MAIN Assy.)
No
Check if the cable that connects the POWER SUPPLY and MAIN Assys is firmly connected.
NG
Failure analysis for the POWER SUPPLY Unit. ⇒ PS1
Yes
Yes
The LED on the front panel indicates ON/STB of the panel and causes for a power-down or shutdown.
If neither the blue nor red LED lights, it is likely that the power to the STB system is not supplied. (failure, PASV-STB status)
Is the voltage at AC_DET on the POWER SUPPLY Unit high?
No
Replace the POWER SUPPLY Unit.
Yes
Failure analysis for the MAIN Assy. ⇒ MA1
Problems concerning the power
Can the unit be turned on (Relay ON)?
No
Is the power shutdown?
No
Is the voltage at the RELAY port of the connectors between the DIGITAL and POWER SUPPLY Assys H (3.3 V)?
No
Failure analysis for the MAIN Assy. ⇒ MA2
If the module microcomputer does not receive the PON command, it is likely that the main microcomputer did not issue the command.
Yes
Yes
Yes
Failure analysis for the POWER SUPPLY Unit. ⇒ PS2
A shutdown occurs.
Yes
See "Shutdown diagnosis." ⇒ SD
No
A power-down occurs.
Yes
See "Power-down diagnosis." ⇒ PD
A power-down will not be generated if the drive is off.
No
Problems concerning lighting of the panel
Does the screen display reset lighting?
No
Is the drive off?
Yes
Turn the drive on.
• Check the DRF SW.
• Before turning the drive off with the RS-232C commands or using the remote control unit, turn the unit off.
Yes
No
Failure analysis for the drive system ⇒ DR1
Is the panel arbitrary turned on or off repeatedly? Or do luminescent spots appear on the screen?
Yes
Failure analysis for the POWER SUPPLY Unit. ⇒ PS3
In a case where luminescent spots appear or the panel is repeatedly turned on or off
No
Yes
Failure analysis for the drive system ⇒ DR2
In a case where luminescent spots appear
Is there any local abnormality on the screen?
Yes
Is the abnormality associated with one address or one TCP?
No
Is the abnormality associated with a single scan line?
No
Replace the panel chassis.
No
Yes
Yes
Failure analysis for the drive system ⇒ DR3
Failure analysis for the drive system ⇒ DR4
Ⓐ


A
In the subsequent diagnostic steps, it is most likely that the multi base section is in failure.
Problems concerning video display
Is the panel mask properly displayed?
No
Failure analysis for the drive system ⇒ DR2
Yes
Check with the animated slanting ramp mask.
Is the on-screen display (OSD) properly displayed?
No
Failure analysis for the DIGITAL Assy ⇒ DG1
Yes
Check on the Factory menu.
Is an external video signal displayed properly?
No
Failure analysis for the MAIN Assy ⇒ MA3
Yes
Problems concerning the audio output
Is the audio signal output?
No
Failure analysis for the audio system ⇒ AU1
Yes
Specific failure whose cause is difficult to identify in the initial stage

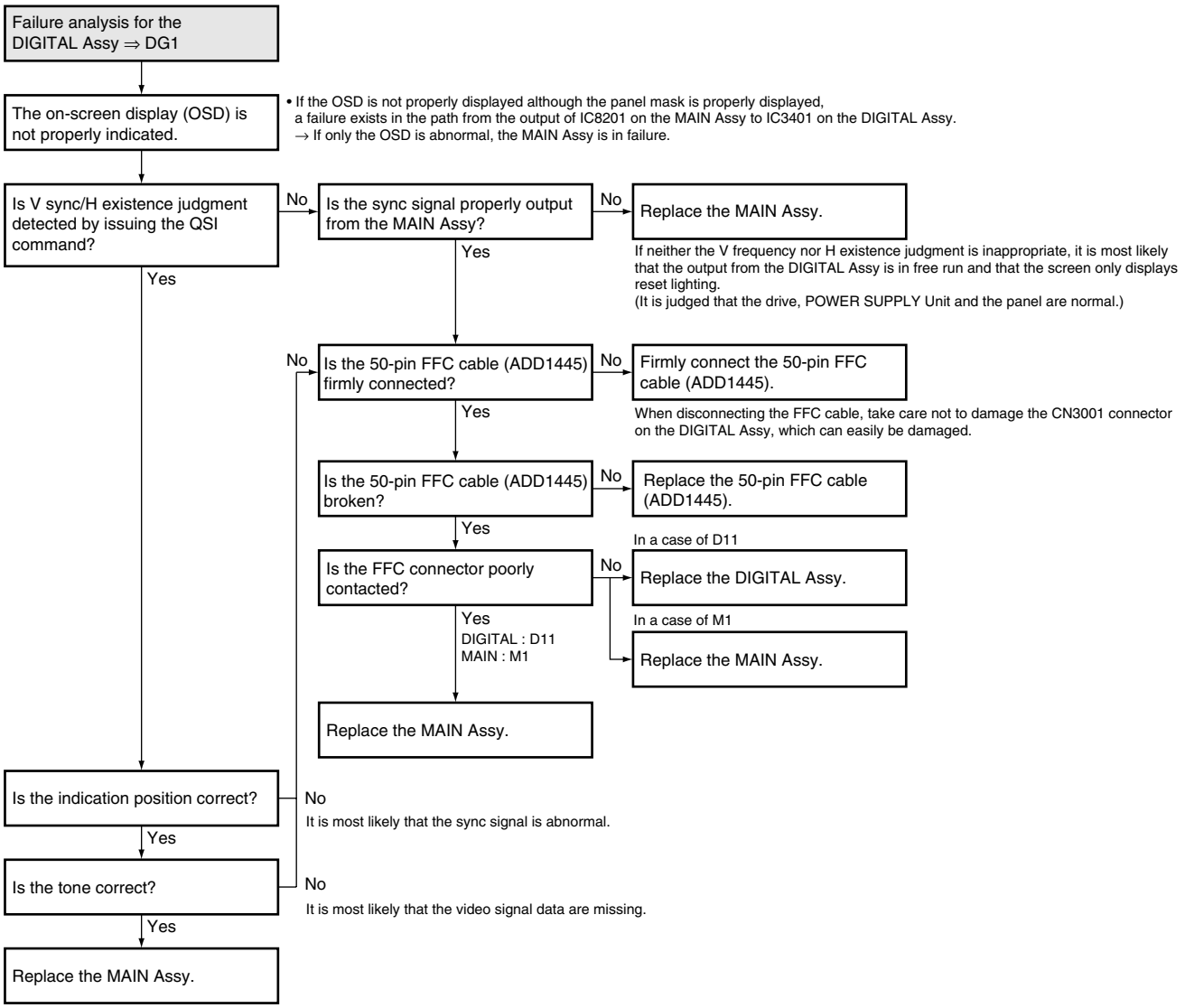
5.1.2 FLOWCHART OF FAILURE ANALYSIS FOR THE POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit


Failure analysis for the POWER SUPPLY Unit. ⇒ PS1
STB 3.3 V power is not output.
Is the cable connected firmly to the P4 connector?
No
Properly connect the cable between the P4 and D21 connectors.
Yes
Is the cable to the P4 connector broken?
Yes
Replace the defective cable (J109 : ADX3408).
Check the voltage at the DIGITAL Assy and POWER SUPPLY Unit.
No
Is the cable connected firmly to the P9 connector?
No
Properly connect the cable between the P9 and M3 connectors.
Yes
Is the cable to the P9 connector broken?
Yes
Replace the defective cable (J119 : ADX3402).
Check the voltage at the MAIN Assy and POWER SUPPLY Unit.
No
Is the fuse (F101, F102) blown?
Yes
Replace the POWER SUPPLY Unit.
No
Is one of the limiting resistors (R101/R102) blown?
Yes
Replace the POWER SUPPLY Unit.
Check the resistance between LF101 (Pin 2) and the JW199, using a tester.
No
The POWER SUPPLY Unit is normal.
Failure analysis for the POWER SUPPLY Unit. ⇒ PS2
The power is not on, even though the RELAY port is active.
Is the relay (RY102) on?
No
Replace the POWER SUPPLY Unit.
• Check the relay operation at the terminal (Pin 11 of P4). (Voltage: 3.3 V)
• Check the relay sound (click).
Yes
Is the PFC voltage normal?
No
Replace the POWER SUPPLY Unit.
• Check the voltage between the JW140 (PFC OUT) and JW180 (Hot_GND) terminal.
• The voltage must be around 390 V (failure if it is 340 V or less).
Caution: High voltage!
Yes
The POWER SUPPLY Unit is normal.
Failure analysis for the POWER SUPPLY Unit. ⇒ PS3
The cells of the panel do not light normally.
Is the VADR voltage within the specified values?
No
Replace the POWER SUPPLY Unit.
The specified voltage values are between 57 and 63 V.
Yes
Is there a fluctuation in the VADR voltage?
Yes
Replace the POWER SUPPLY Unit.
The ripple must be within 6 V.
No
Is the VSUS voltage within the specified range?
No
Replace the POWER SUPPLY Unit.
The specified voltage values are between 200 and 210 V (VSU: 125/35°C).
Yes
Is there a fluctuation in the VSUS voltage?
Yes
Replace the POWER SUPPLY Unit.
The ripple must be within 10 V.
No
The POWER SUPPLY Unit is normal.

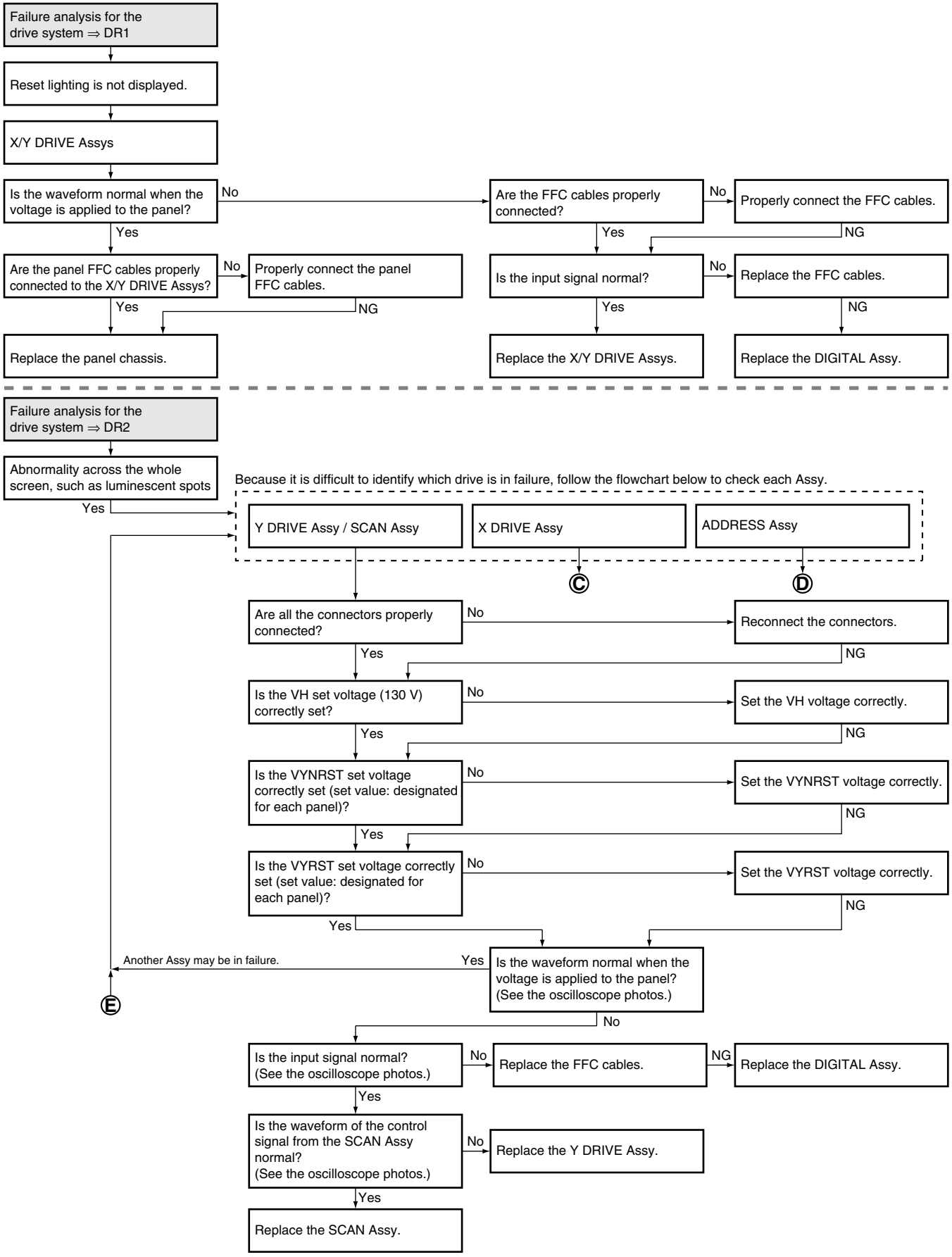
5.1.3 FLOWCHART OF FAILURE ANALYSIS FOR THE DIGITAL ASSY

Flowchart of Failure Analysis for The DIGITAL Assy

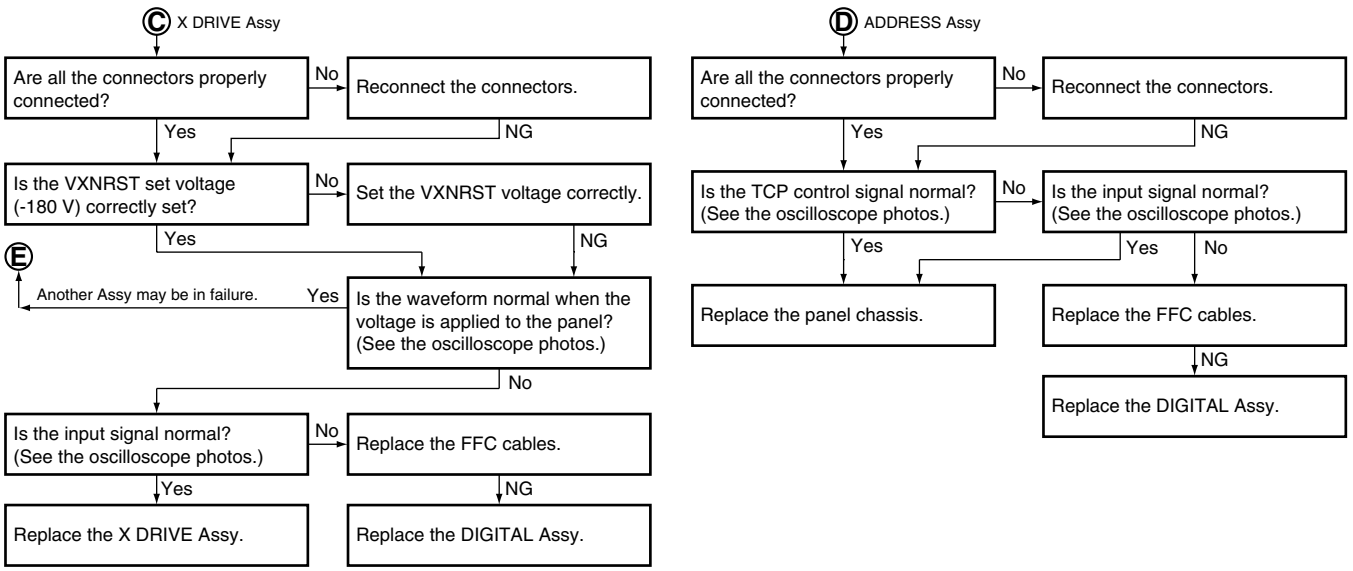

Failure analysis for the DIGITAL Assy ⇒ DG1
The on-screen display (OSD) is not properly indicated.
• If the OSD is not properly displayed although the panel mask is properly displayed, a failure exists in the path from the output of IC8201 on the MAIN Assy to IC3401 on the DIGITAL Assy.
→ If only the OSD is abnormal, the MAIN Assy is in failure.
Is V sync/H existence judgment detected by issuing the QSI command?
No
Is the sync signal properly output from the MAIN Assy?
No
Replace the MAIN Assy.
If neither the V frequency nor H existence judgment is inappropriate, it is most likely that the output from the DIGITAL Assy is in free run and that the screen only displays reset lighting.
(It is judged that the drive, POWER SUPPLY Unit and the panel are normal.)
Yes
Yes
No
Is the 50-pin FFC cable (ADD1445) firmly connected?
No
Firmly connect the 50-pin FFC cable (ADD1445).
When disconnecting the FFC cable, take care not to damage the CN3001 connector on the DIGITAL Assy, which can easily be damaged.
Yes
Is the 50-pin FFC cable (ADD1445) broken?
No
Replace the 50-pin FFC cable (ADD1445).
Yes
In a case of D11
Is the FFC connector poorly contacted?
No
Replace the DIGITAL Assy.
Yes
DIGITAL : D11
MAIN : M1
In a case of M1
Replace the MAIN Assy.
Replace the MAIN Assy.
Is the indication position correct?
No
It is most likely that the sync signal is abnormal.
Yes
Is the tone correct?
No
It is most likely that the video signal data are missing.
Yes
Replace the MAIN Assy.

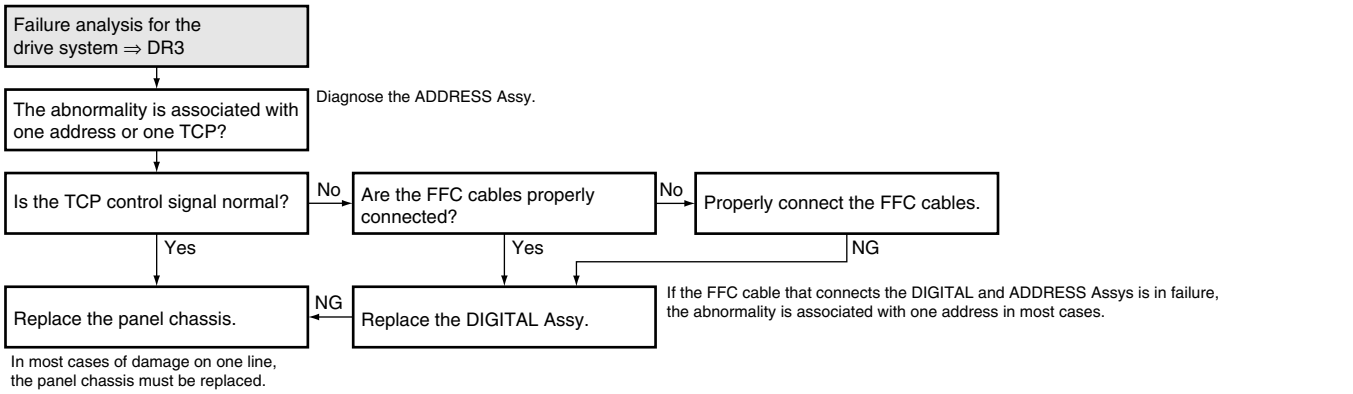
5.1.4 FLOWCHART OF FAILURE ANALYSIS FOR THE DRIVE ASSY

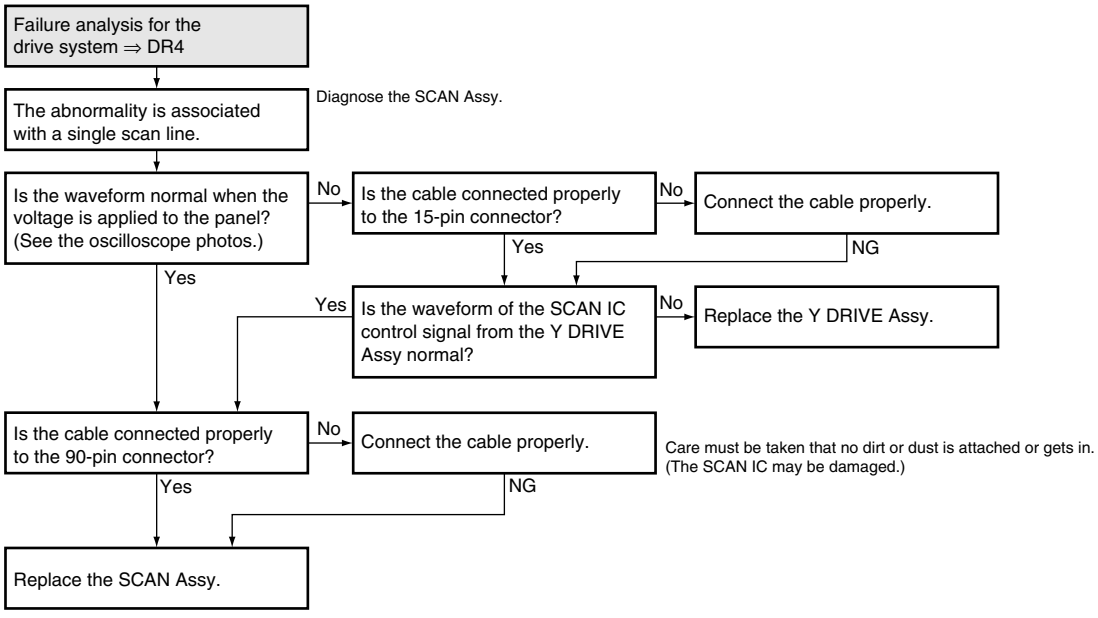
Flowchart of Failure Analysis for The Drive Assy (1)


Failure analysis for the drive system ⇒ DR1
Reset lighting is not displayed.
X/Y DRIVE Assys
Is the waveform normal when the voltage is applied to the panel?
No
Are the FFC cables properly connected?
No
Properly connect the FFC cables.
Yes
NG
Yes
Are the panel FFC cables properly connected to the X/Y DRIVE Assys?
No
Properly connect the panel FFC cables.
Is the input signal normal?
No
Replace the FFC cables.
Yes
NG
Yes
NG
Replace the panel chassis.
Replace the X/Y DRIVE Assys.
Replace the DIGITAL Assy.
Failure analysis for the drive system ⇒ DR2
Abnormality across the whole screen, such as luminescent spots
Because it is difficult to identify which drive is in failure, follow the flowchart below to check each Assy.
Yes
Y DRIVE Assy / SCAN Assy
X DRIVE Assy
ADDRESS Assy
Ⓒ
Ⓓ
Are all the connectors properly connected?
No
Reconnect the connectors.
Yes
NG
Is the VH set voltage (130 V) correctly set?
No
Set the VH voltage correctly.
Yes
NG
Is the VYNRST set voltage correctly set (set value: designated for each panel)?
No
Set the VYNRST voltage correctly.
Yes
NG
Is the VYRST set voltage correctly set (set value: designated for each panel)?
No
Set the VYRST voltage correctly.
Yes
NG
Another Assy may be in failure.
Yes
Is the waveform normal when the voltage is applied to the panel? (See the oscilloscope photos.)
Ⓔ
No
Is the input signal normal? (See the oscilloscope photos.)
No
Replace the FFC cables.
NG
Replace the DIGITAL Assy.
Yes
Is the waveform of the control signal from the SCAN Assy normal? (See the oscilloscope photos.)
No
Replace the Y DRIVE Assy.
Yes
Replace the SCAN Assy.

Flowchart of Failure Analysis for The Drive Assy (2)

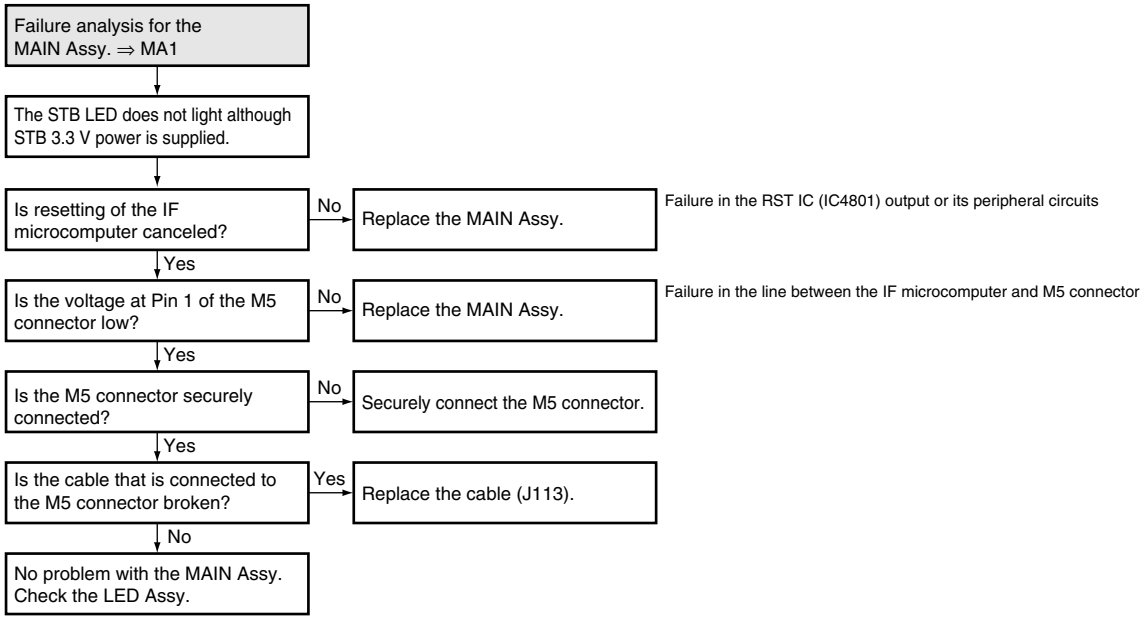


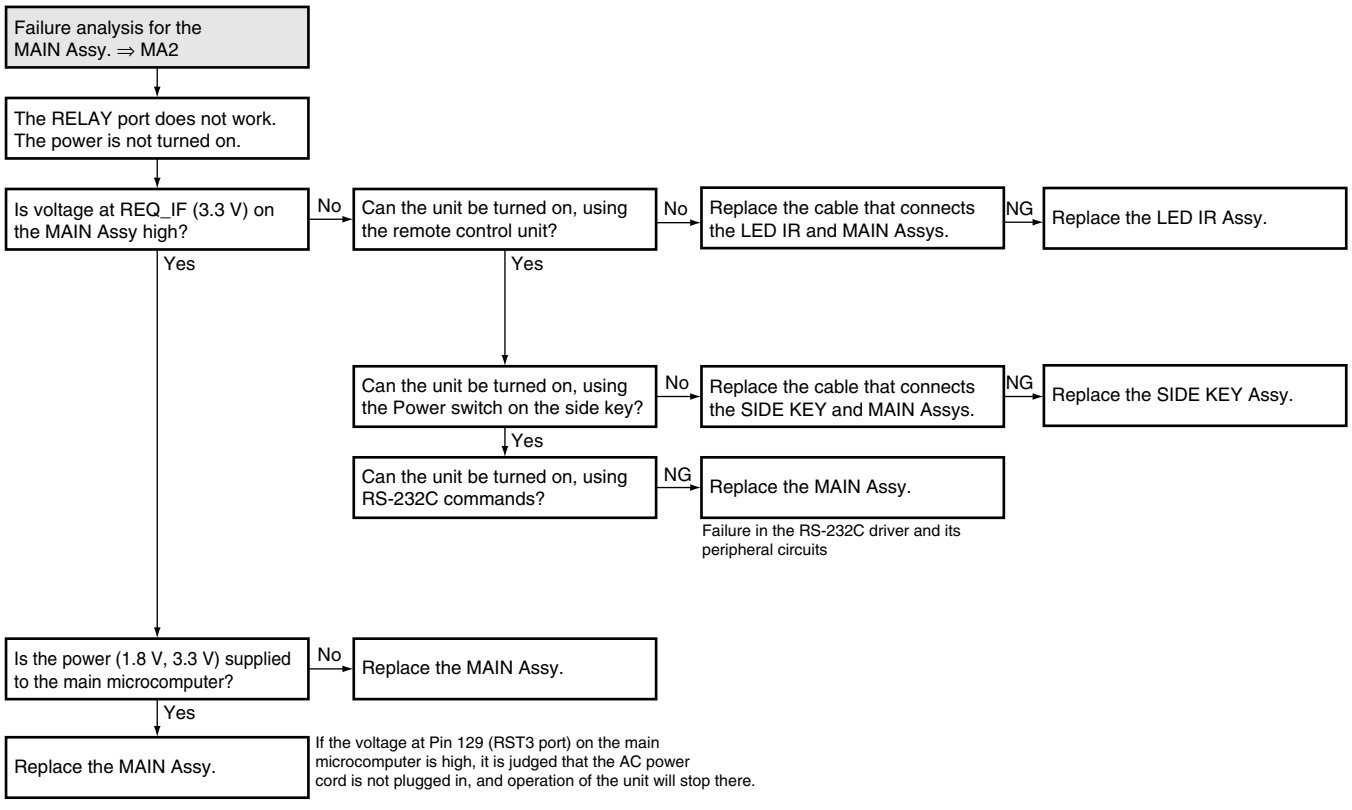

Failure analysis for the drive system ⇒ DR3
The abnormality is associated with one address or one TCP?
Diagnose the ADDRESS Assy.
Is the TCP control signal normal?
No
Are the FFC cables properly connected?
No
Properly connect the FFC cables.
Yes
Yes
NG
Replace the panel chassis.
NG
Replace the DIGITAL Assy.
If the FFC cable that connects the DIGITAL and ADDRESS Assys is in failure, the abnormality is associated with one address in most cases.
In most cases of damage on one line, the panel chassis must be replaced.


Failure analysis for the drive system ⇒ DR4
The abnormality is associated with a single scan line.
Diagnose the SCAN Assy.
Is the waveform normal when the voltage is applied to the panel? (See the oscilloscope photos.)
No
Is the cable connected properly to the 15-pin connector?
No
Connect the cable properly.
Yes
NG
Yes
Yes
Is the waveform of the SCAN IC control signal from the Y DRIVE Assy normal?
No
Replace the Y DRIVE Assy.
Is the cable connected properly to the 90-pin connector?
No
Connect the cable properly.
Yes
NG
Care must be taken that no dirt or dust is attached or gets in. (The SCAN IC may be damaged.)
Replace the SCAN Assy.

5.1.5 FLOWCHART OF FAILURE ANALYSIS FOR THE MAIN ASSY

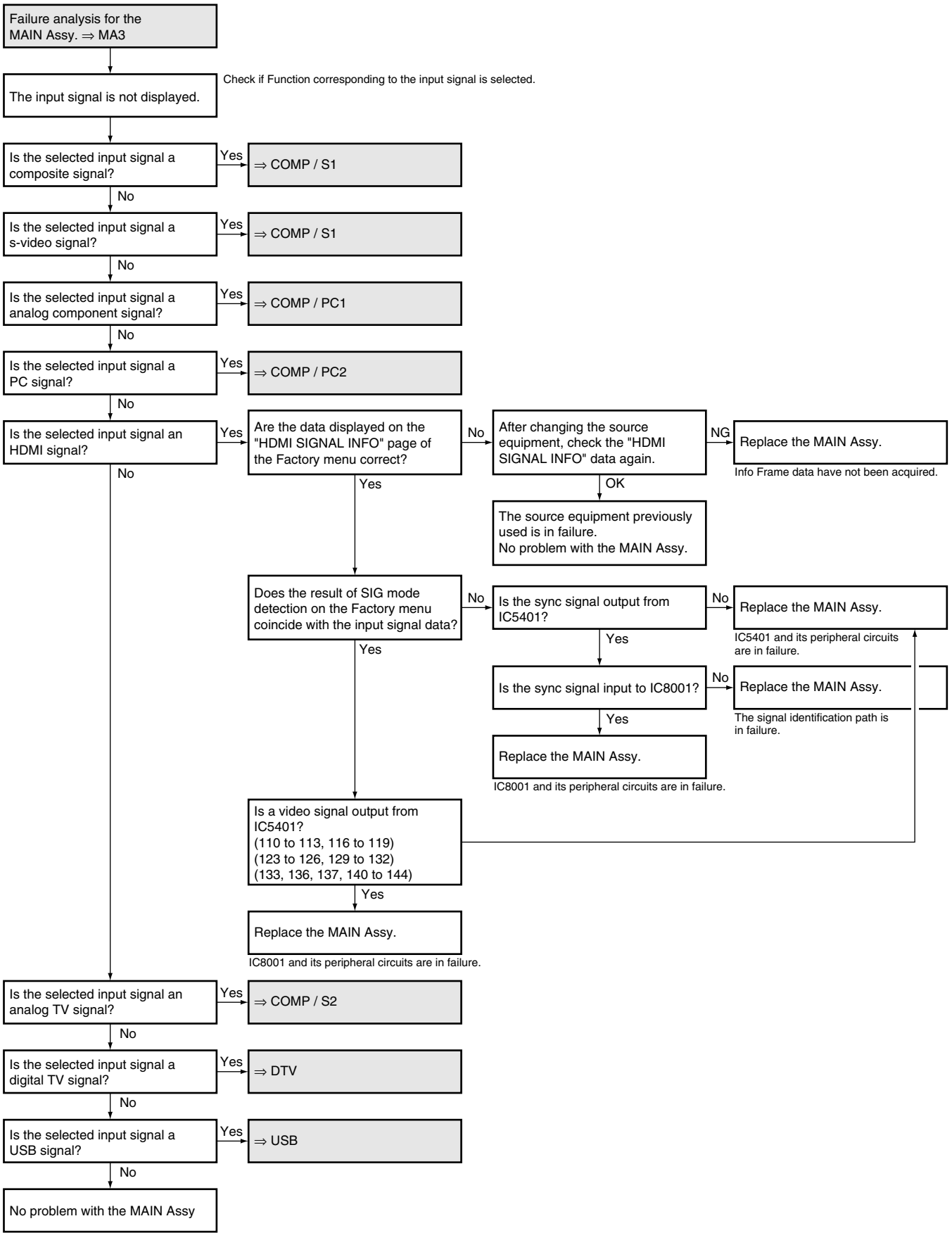
Flowchart of Failure Analysis for The MAIN Assy


Failure analysis for the MAIN Assy. ⇒ MA1
The STB LED does not light although STB 3.3 V power is supplied.
Is resetting of the IF microcomputer canceled?
No
Replace the MAIN Assy.
Failure in the RST IC (IC4801) output or its peripheral circuits
Yes
Is the voltage at Pin 1 of the M5 connector low?
No
Replace the MAIN Assy.
Failure in the line between the IF microcomputer and M5 connector
Yes
Is the M5 connector securely connected?
No
Securely connect the M5 connector.
Yes
Is the cable that is connected to the M5 connector broken?
Yes
Replace the cable (J113).
No
No problem with the MAIN Assy. Check the LED Assy.


Failure analysis for the MAIN Assy. ⇒ MA2
The RELAY port does not work. The power is not turned on.
Is voltage at REQ_IF (3.3 V) on the MAIN Assy high?
No
Can the unit be turned on, using the remote control unit?
No
Replace the cable that connects the LED IR and MAIN Assys.
NG
Replace the LED IR Assy.
Yes
Yes
Can the unit be turned on, using the Power switch on the side key?
No
Replace the cable that connects the SIDE KEY and MAIN Assys.
NG
Replace the SIDE KEY Assy.
Yes
Can the unit be turned on, using RS-232C commands?
NG
Replace the MAIN Assy.
Failure in the RS-232C driver and its peripheral circuits
Is the power (1.8 V, 3.3 V) supplied to the main microcomputer?
No
Replace the MAIN Assy.
Yes
Replace the MAIN Assy.
If the voltage at Pin 129 (RST3 port) on the main microcomputer is high, it is judged that the AC power cord is not plugged in, and operation of the unit will stop there.

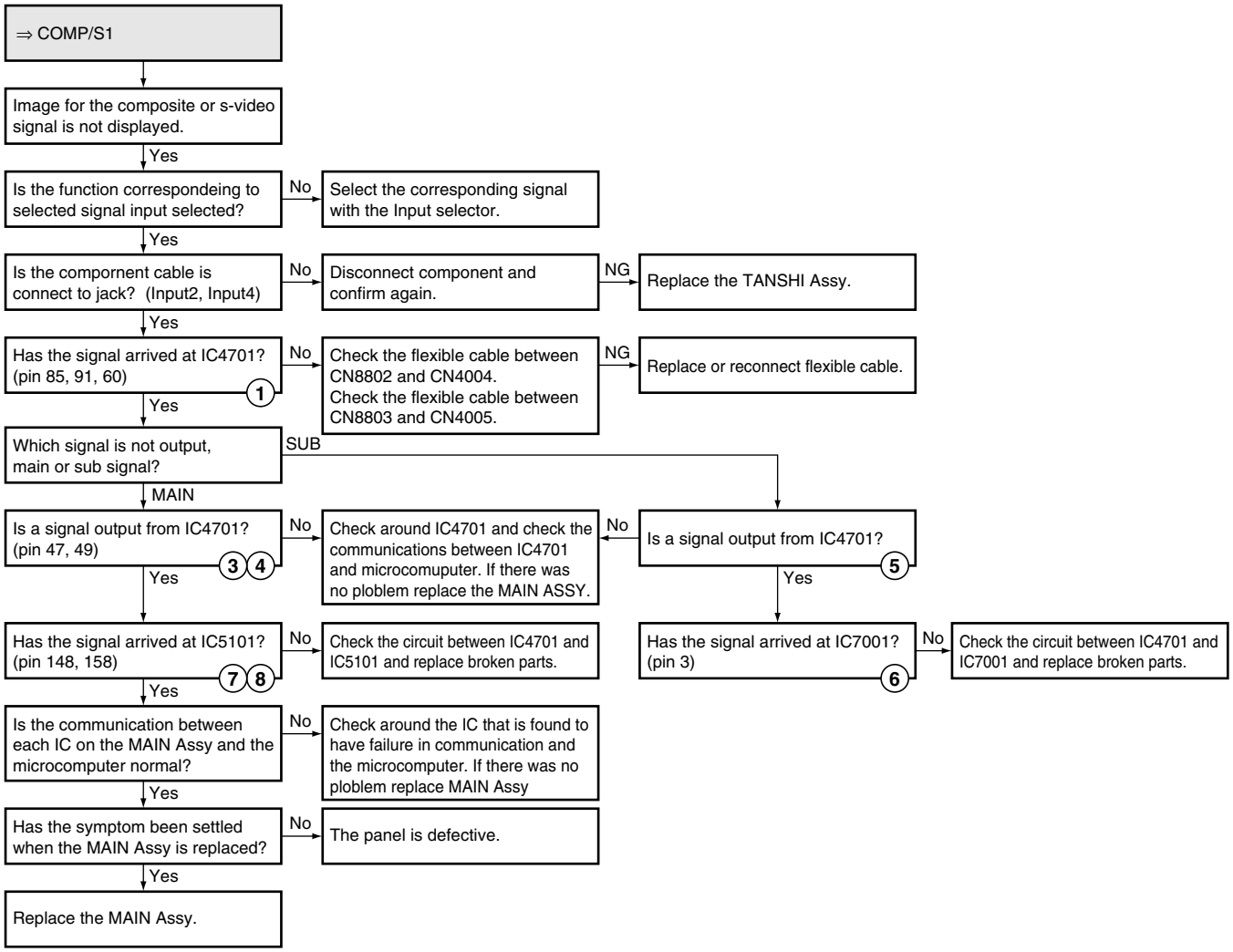
5.1.6 FLOWCHART OF FAILURE ANALYSIS FOR THE VIDEO SYSTEM

Flowchart of Failure Analysis for The Video System


Failure analysis for the MAIN Assy. ⇒ MA3
The input signal is not displayed.
Check if Function corresponding to the input signal is selected.
Is the selected input signal a composite signal?
Yes
⇒ COMP / S1
No
Is the selected input signal a s-video signal?
Yes
⇒ COMP / S1
No
Is the selected input signal a analog component signal?
Yes
⇒ COMP / PC1
No
Is the selected input signal a PC signal?
Yes
⇒ COMP / PC2
No
Is the selected input signal an HDMI signal?
Yes
Are the data displayed on the "HDMI SIGNAL INFO" page of the Factory menu correct?
No
After changing the source equipment, check the "HDMI SIGNAL INFO" data again.
NG
Replace the MAIN Assy.
Info Frame data have not been acquired.
OK
The source equipment previously used is in failure.
No problem with the MAIN Assy.
Yes
Does the result of SIG mode detection on the Factory menu coincide with the input signal data?
No
Is the sync signal output from IC5401?
No
Replace the MAIN Assy.
IC5401 and its peripheral circuits are in failure.
Yes
Is the sync signal input to IC8001?
No
Replace the MAIN Assy.
The signal identification path is in failure.
Yes
Replace the MAIN Assy.
IC8001 and its peripheral circuits are in failure.
Yes
Is a video signal output from IC5401?
(110 to 113, 116 to 119)
(123 to 126, 129 to 132)
(133, 136, 137, 140 to 144)
Yes
Replace the MAIN Assy.
IC8001 and its peripheral circuits are in failure.
No
Is the selected input signal an analog TV signal?
Yes
⇒ COMP / S2
No
Is the selected input signal a digital TV signal?
Yes
⇒ DTV
No
Is the selected input signal a USB signal?
Yes
⇒ USB
No
No problem with the MAIN Assy

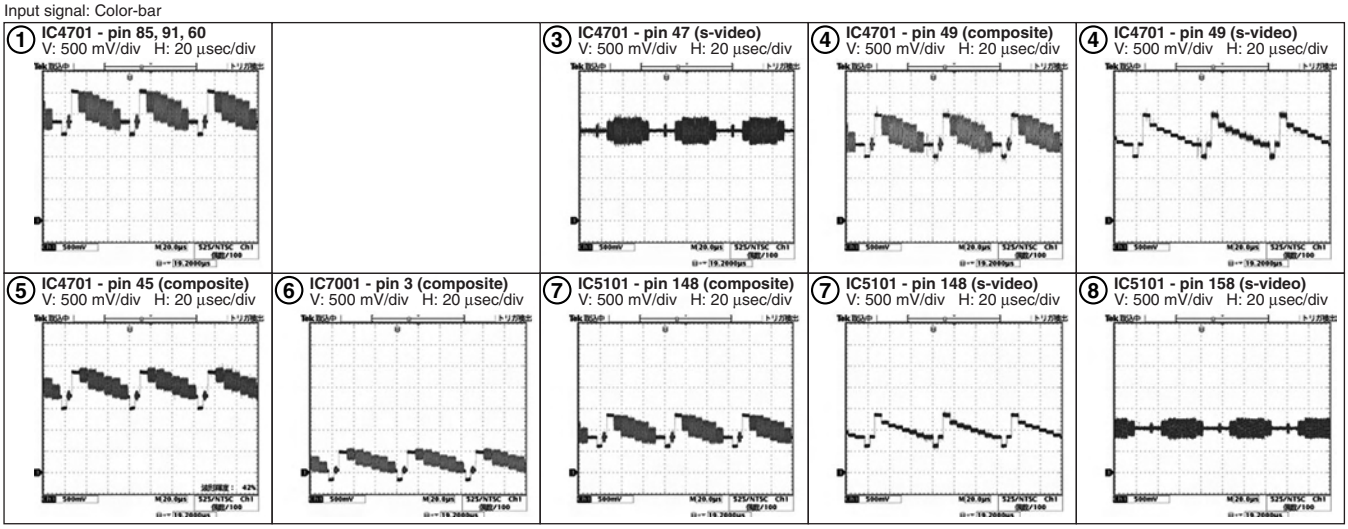
Flowchart of Failure Analysis for The Video System

No video from Composite or S-VIDEO

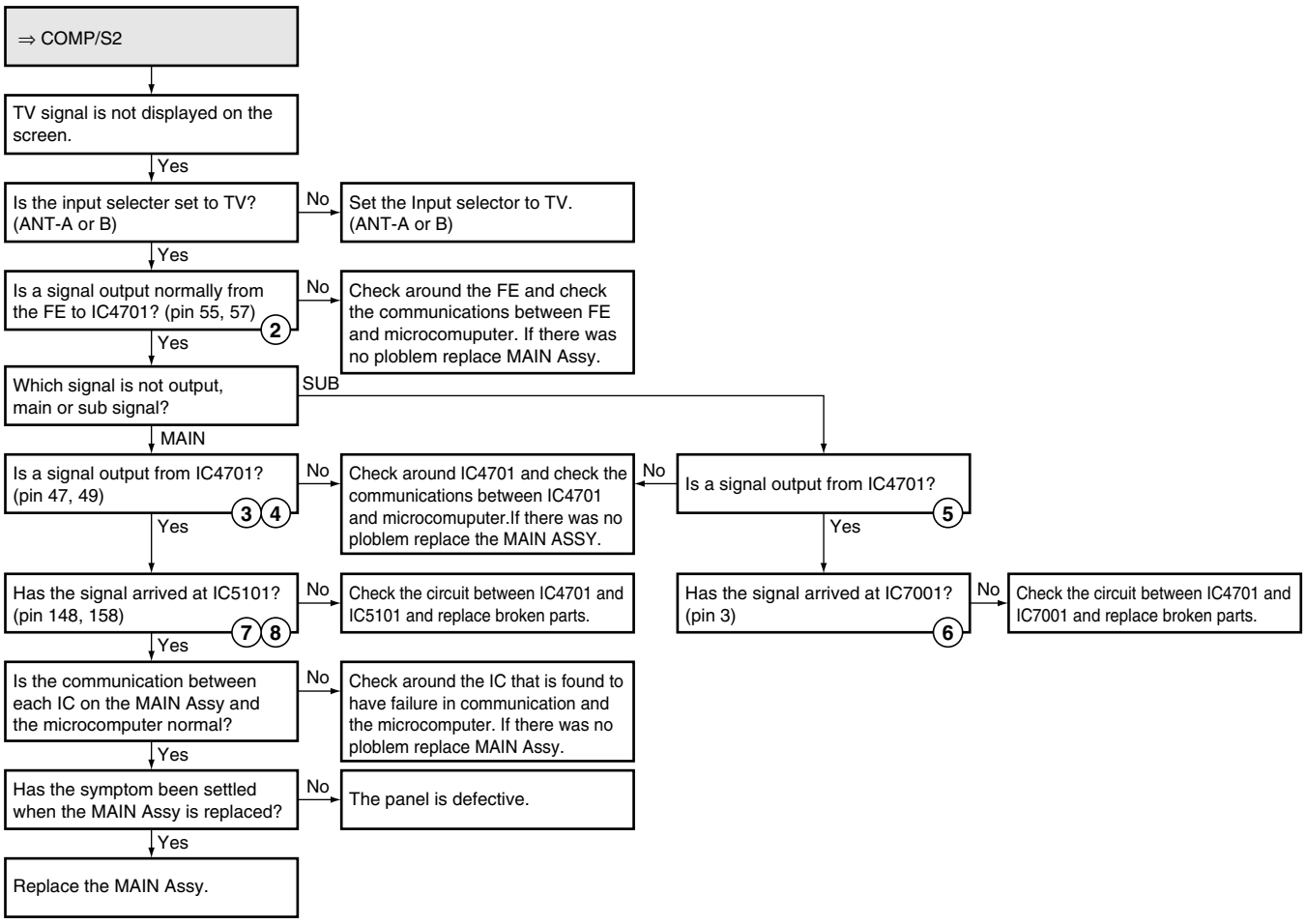

⇒ COMP/S1
Image for the composite or s-video signal is not displayed.
Yes
Is the function correspondeing to selected signal input selected?
No
Select the corresponding signal with the Input selector.
Yes
Is the compornent cable is connect to jack? (Input2, Input4)
No
Disconnect component and confirm again.
NG
Replace the TANSHI Assy.
Yes
Has the signal arrived at IC4701? (pin 85, 91, 60)
1
No
Check the flexible cable between CN8802 and CN4004.
Check the flexible cable between CN8803 and CN4005.
NG
Replace or reconnect flexible cable.
Yes
Which signal is not output, main or sub signal?
SUB
MAIN
Is a signal output from IC4701? (pin 47, 49)
3 4
No
Check around IC4701 and check the communications between IC4701 and microcomuputer. If there was no ploblem replace the MAIN ASSY.
Yes
Is a signal output from IC4701?
5
No
Yes
Has the signal arrived at IC5101? (pin 148, 158)
7 8
No
Check the circuit between IC4701 and IC5101 and replace broken parts.
Yes
Has the signal arrived at IC7001? (pin 3)
6
No
Check the circuit between IC4701 and IC7001 and replace broken parts.
Is the communication between each IC on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar

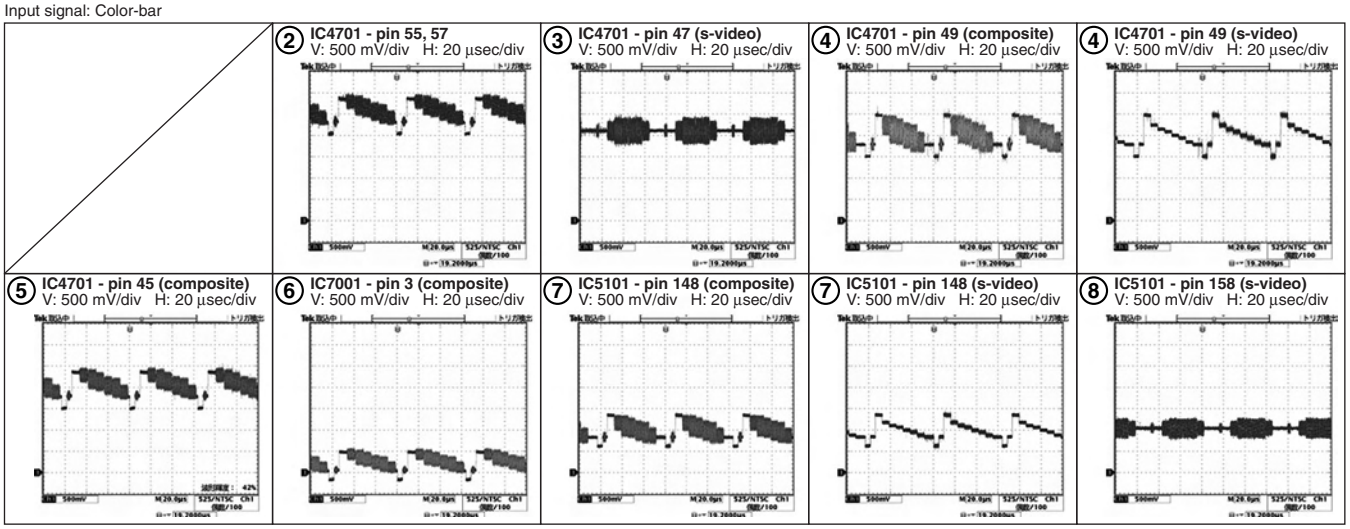

① IC4701 - pin 85, 91, 60
V: 500 mV/div H: 20 µsec/div
③ IC4701 - pin 47 (s-video)
V: 500 mV/div H: 20 µsec/div
④ IC4701 - pin 49 (composite)
V: 500 mV/div H: 20 µsec/div
④ IC4701 - pin 49 (s-video)
V: 500 mV/div H: 20 µsec/div
⑤ IC4701 - pin 45 (composite)
V: 500 mV/div H: 20 µsec/div
⑥ IC7001 - pin 3 (composite)
V: 500 mV/div H: 20 µsec/div
⑦ IC5101 - pin 148 (composite)
V: 500 mV/div H: 20 µsec/div
⑦ IC5101 - pin 148 (s-video)
V: 500 mV/div H: 20 µsec/div
⑧ IC5101 - pin 158 (s-video)
V: 500 mV/div H: 20 µsec/div

No video from TV signal


⇒ COMP/S2
TV signal is not displayed on the screen.
Yes
Is the input selecter set to TV? (ANT-A or B)
No
Set the Input selector to TV. (ANT-A or B)
Yes
Is a signal output normally from the FE to IC4701? (pin 55, 57)
2
No
Check around the FE and check the communications between FE and microcomuputer. If there was no ploblem replace MAIN Assy.
Yes
Which signal is not output, main or sub signal?
SUB
MAIN
Is a signal output from IC4701? (pin 47, 49)
3 4
No
Check around IC4701 and check the communications between IC4701 and microcomuputer.If there was no ploblem replace the MAIN ASSY.
No
Is a signal output from IC4701?
5
Yes
Yes
Has the signal arrived at IC5101? (pin 148, 158)
7 8
No
Check the circuit between IC4701 and IC5101 and replace broken parts.
Has the signal arrived at IC7001? (pin 3)
6
No
Check the circuit between IC4701 and IC7001 and replace broken parts.
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar


② IC4701 - pin 55, 57
V: 500 mV/div H: 20 µsec/div
③ IC4701 - pin 47 (s-video)
V: 500 mV/div H: 20 µsec/div
④ IC4701 - pin 49 (composite)
V: 500 mV/div H: 20 µsec/div
④ IC4701 - pin 49 (s-video)
V: 500 mV/div H: 20 µsec/div
⑤ IC4701 - pin 45 (composite)
V: 500 mV/div H: 20 µsec/div
⑥ IC7001 - pin 3 (composite)
V: 500 mV/div H: 20 µsec/div
⑦ IC5101 - pin 148 (composite)
V: 500 mV/div H: 20 µsec/div
⑦ IC5101 - pin 148 (s-video)
V: 500 mV/div H: 20 µsec/div
⑧ IC5101 - pin 158 (s-video)
V: 500 mV/div H: 20 µsec/div

No video from component

⇒ COMP/PC1

Image for the component signals is not displayed.

Yes

Is the function corresponding to selected signal input selected?
- No → Select the corresponding signal with the input selector.

Yes

Has the signal arrived at IC4901 ?
- No → Check the communication between the CN8802 and CN4004 or between CN8803 and CN4005 or around of jack.
  - No → Replace flexible cable.

Yes

What is a input signal ?
- Input sigal: 480i → Is a signal output from IC4901? (pin 30, 32, 34)
  - No → Check around IC4901 and check the communications between IC4901 and the microcomputer. If there was no ploblem replace the MAIN ASSY.
  - Yes → Has the signal arrived at IC5101 ? (pin 154, 162, 170)
    - No → Check the circuit between IC4901 and IC5101 and replace broken parts.
    - Yes
- Input sigal: except 480i → Is a signal output from IC4901? (pin 41, 43, 45) 13 14 15
  - No → Check around IC4901 and check the communications between IC4901 and the microcomputer. If there was no ploblem replace the MAIN ASSY.
  - Yes → Has the signal arrived at IC5301? (pin 43, 48, 54) 16 17 18
    - No → Check the circuit between IC4901 and IC5301 and replace broken parts.
    - Yes

Is the communication between each IC on the MAIN Assy and the microcomputer nomal?
- No → Check around the IC that is found to have a failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.

Yes

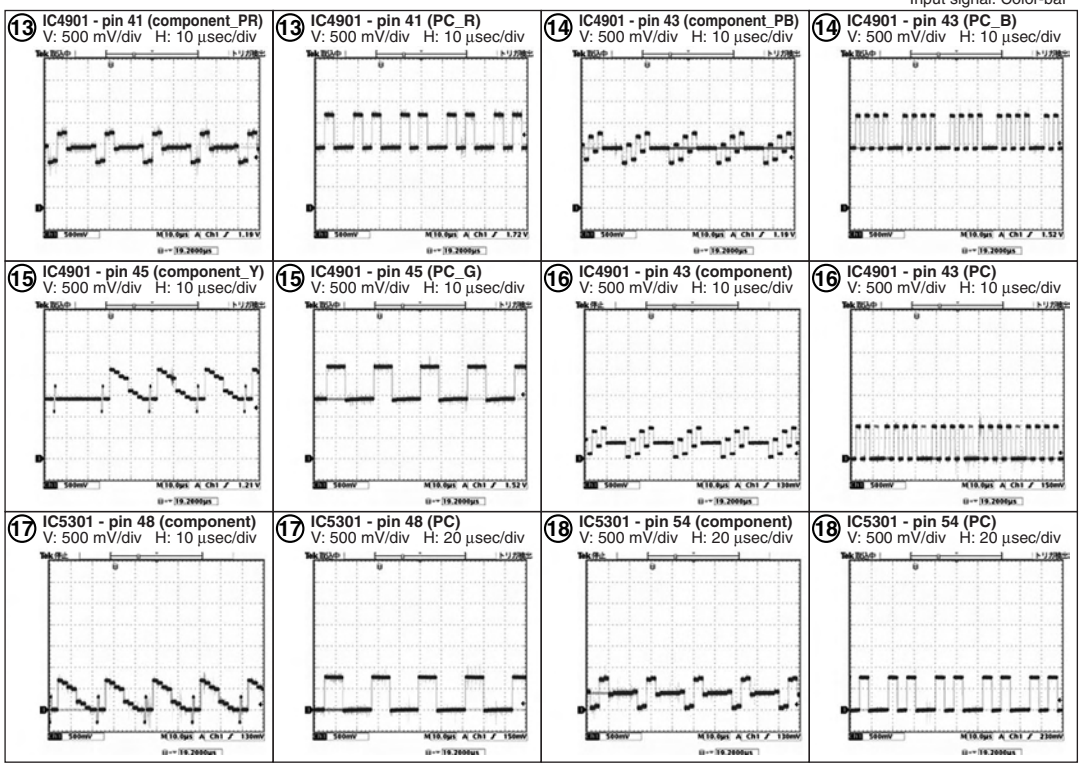
Has the symptom been settled when the MAIN Assy is replaced?
- No → The panel is defective.

Yes

Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar


13 IC4901 - pin 41 (component_PR)
V: 500 mV/div H: 10 µsec/div
13 IC4901 - pin 41 (PC_R)
V: 500 mV/div H: 10 µsec/div
14 IC4901 - pin 43 (component_PB)
V: 500 mV/div H: 10 µsec/div
14 IC4901 - pin 43 (PC_B)
V: 500 mV/div H: 10 µsec/div
15 IC4901 - pin 45 (component_Y)
V: 500 mV/div H: 10 µsec/div
15 IC4901 - pin 45 (PC_G)
V: 500 mV/div H: 10 µsec/div
16 IC4901 - pin 43 (component)
V: 500 mV/div H: 10 µsec/div
16 IC4901 - pin 43 (PC)
V: 500 mV/div H: 10 µsec/div
17 IC5301 - pin 48 (component)
V: 500 mV/div H: 10 µsec/div
17 IC5301 - pin 48 (PC)
V: 500 mV/div H: 20 µsec/div
18 IC5301 - pin 54 (component)
V: 500 mV/div H: 20 µsec/div
18 IC5301 - pin 54 (PC)
V: 500 mV/div H: 20 µsec/div

No video from PC

⇒ COMP/PC2

Image for the PC signal is not displayed.

Yes

Is the function corresponding to selected signal input selected?
- No → Select the corresponding signal with the input selector.

Yes

Has the signal arrived at IC4901? (pin 8, 10, 12) ⑩⑪⑫
- No → Check the communication between the CN9003 and CN4013 and around IC4901.
  - No → Replace flexible cable.

Yes

Is a signal output from IC4901? (pin 41, 43, 45) ⑬⑭⑮
- No → Check around IC4901 and check the communications between IC4901 and the microcomputer. If there was no ploblem replace the MAIN ASSY.

Yes

Has the signal arrived at IC5301? (pin 43, 48, 54) ⑯⑰⑱
- No → Check the circuit between IC4901 and IC5301 and replace broken parts.

Yes

Is the communication between each IC on the MAIN Assy and the microcomputer nomal?
- No → Check around the IC that is found to have a failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.

Yes

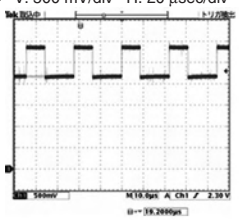
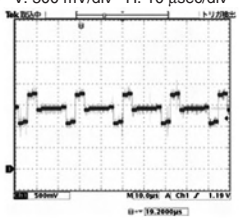
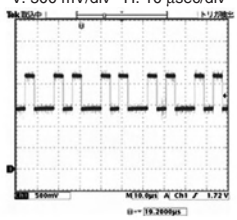
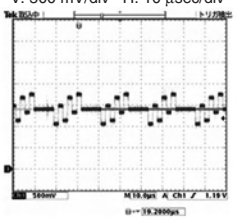
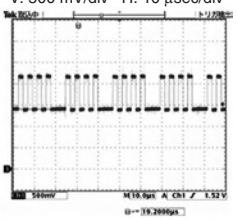
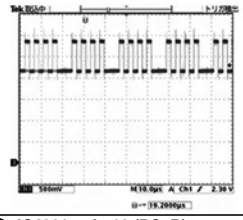
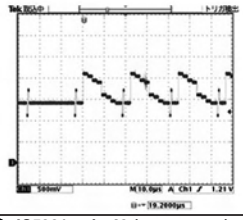
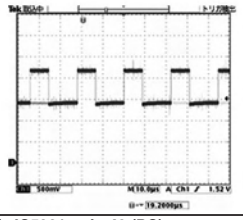
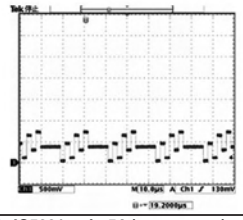
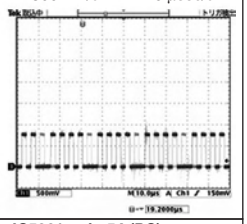
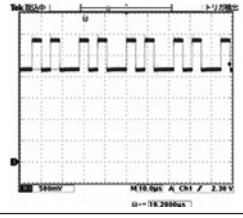
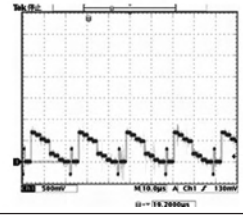
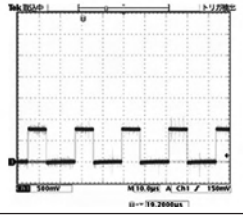
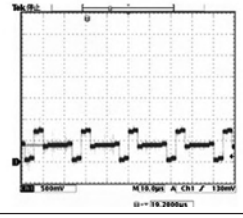
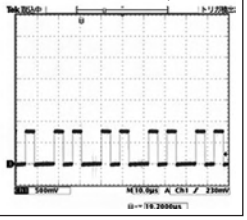
Has the symptom been settled when the MAIN Assy is replaced?
- No → The panel is defective.

Yes

Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar

⑩ IC4901 - pin 8 (PC_G) V: 500 mV/div H: 20 µsec/div	⑬ IC4901 - pin 41 (component_PR) V: 500 mV/div H: 10 µsec/div	⑬ IC4901 - pin 41 (PC_R) V: 500 mV/div H: 10 µsec/div	⑭ IC4901 - pin 43 (component_PB) V: 500 mV/div H: 10 µsec/div	⑭ IC4901 - pin 43 (PC_B) V: 500 mV/div H: 10 µsec/div
				
⑪ IC4901 - pin 10 (PC_B) V: 500 mV/div H: 20 µsec/div	⑮ IC4901 - pin 45 (component_Y) V: 500 mV/div H: 10 µsec/div	⑮ IC4901 - pin 45 (PC_G) V: 500 mV/div H: 10 µsec/div	⑯ IC4901 - pin 43 (component) V: 500 mV/div H: 10 µsec/div	⑯ IC4901 - pin 43 (PC) V: 500 mV/div H: 10 µsec/div
				
⑫ IC4901 - pin 12 (PC_R) V: 500 mV/div H: 20 µsec/div	⑰ IC5301 - pin 48 (component) V: 500 mV/div H: 10 µsec/div	⑰ IC5301 - pin 48 (PC) V: 500 mV/div H: 20 µsec/div	⑱ IC5301 - pin 54 (component) V: 500 mV/div H: 20 µsec/div	⑱ IC5301 - pin 54 (PC) V: 500 mV/div H: 20 µsec/div
				

No video from USB input

⇒ USB

The image of the USB card doesn't come out.

Yes

Has the function is selected Home Media Gallery by Home menu? — No → Select the input of specification by the input switch.

Yes

Is the contents list are appear? — No → Has USB memory or digital camerra is connected to USB connecter? — NG → Insert USB device such as USB flash memory.

Yes

Has the signal come to IC6301? — No → Check around USB connecter or USB cable and check between pin 2, 3 of CN7101 and pin 305, 406 of IC6301. — NG → Replace USB cable.

Yes

Is the signal from IC6301 to IC7201? — No → Check between IC6301 and IC7201. If there is no problem then replace IC6301.

Yes

Is the signal input from IC7201 to IC8001? — No → Check between IC7201 and IC8001. If there is no problem replace IC7201.

Yes

Has the symptom been settled when the MAIN Assy is replaced? — No → The panel is defective.

Yes

Replace the MAIN Assy.

No monitor output

⇒ MONI_V

MONITOR OUT image is not displayed.

Yes

Is a signal being input other than the component or RGB signal? — No → Only the component and RGB signals cannot be output from MONITOR OUT. Check the unit using either the component or RGB signal.

Yes

Has the signal arrived to IC4701? — No → Check the communication between the jack and IC4701. If there was no ploblem replace IO Assy.

Yes

Is a signal output from IC4701? (pin 79) (28) — No → Check around IC4701 and check the communications between IC4701 and the microcomputer. If there was no ploblem then replace the MAIN ASSY.

Yes

Is a signal arrived to CN8803? — No → Check the communication from IC4701 to CN4005. If there is no ploblem, check the Flexible cable between CN4005 and CN8803. — NG → Replace flexible cable.

Yes

Is a signal output from jack? (29) — No → Check the communication between the CN8803 and Jack. If there was no ploblem replace IO Assy.

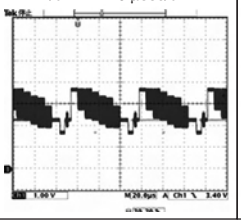
Yes

Finishing troubleshooting.

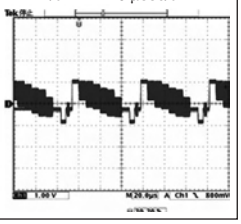
● Waveforms

Input signal: Color-bar

(28) **IC4701 - pin 79**
V: 1 V/div H: 20 µsec/div



(29) **R8801**
V: 1 V/div H: 20 µsec/div



5.1.7 FLOWCHART OF FAILURE ANALYSIS FOR THE AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System

No audio from monitor out

⇒ MONI_A

The sound is not emitted audio out.

Yes

Is a signal output from IC4701? (pin 33, 34) (30)
- No → Check the surrounding of IC4701 and each input signal. If there was no ploblem, replace the MAIN ASSY.

Yes

Has the signal arrived at CN4005?
- No → Check the communication between IC4701 and CN4005.
  - NG → Replace the MAIN Assy.

Yes

Is a signal output from CN8803?
- No → Check the Flexible cable between CN4005 and CN8803.
  - NG → Replace or reconnect flexible cable.

Yes

Has the signal come to TP8825 or TP8826?
- No → Check the contact between the CN8803 and R8886. Check the contact between the CN8803 and R8887.
  - NG → Replace the TANSHI Assy.

Yes

Is a signal output from jack?
- No → Check the communication between the CN8803 and Jack. If there was no ploblem, replace IO Assy.
  - NG → Replace the TANSHI Assy.

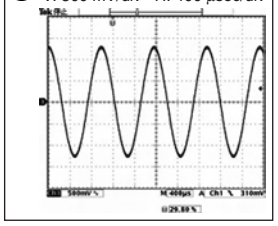
Yes

Finishing troubleshooting.

● Waveforms

Input signal: 1kHz
Sound volume is fixed to 25.

(30) IC4701 - pin 33, 34 (AC)
V: 500 mV/div H: 400 µsec/div



No audio output from subwoofer

⇒ SUB-W

Has the sound been emitted from the Subwoofer?
- No → Cansel muting then check again.
  - No → Cansel muting then check again.
  - Yes → Is the volume set to 0?
    - No → Raise the volume then check again.

Yes

Is a signal output from IC4701? (pin 31, 32) (31)
- No → Check the around of IC4701 and each input signal. If there was no ploblem, replace the MAIN ASSY.

Yes

Is a signal output from IC4704? (pin 1, 7) (32)
- No → Check around IC4704.
  - NG → Replace the MAIN Assy.

Yes

Has the signal arrived at CN4005?
- No → Check the communication between IC4704 to CN4005.
  - NG → Replace the MAIN Assy.

Yes

Is a signal output from CN8803?
- No → Check the Flexible cable between CN4005 and CN8803.
  - NG → Replace or reconnect flexible cable.

Yes

Has the signal come to TP8843?
- No → Check the contact between the CN8803 and R8892.
  - NG → Replace the TANSHI Assy.

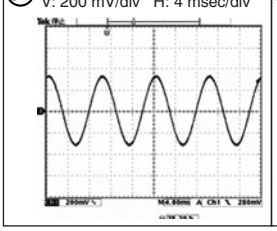
Yes

Check the around of pin Jack.

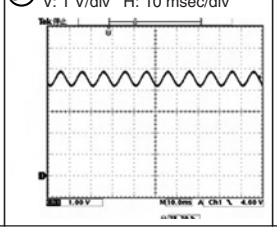
● Waveforms

Input signal: 100 Hz
Sound volume is fixed to 25.

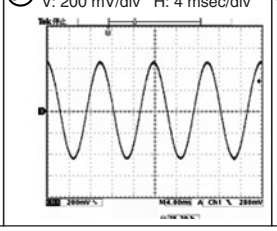
(31) IC4701 - pin 31, 32 (AC-SUBWOO)
V: 200 mV/div H: 4 msec/div



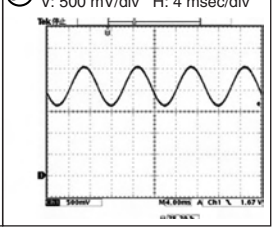
(31) IC4701 - pin 31, 32 (DC-SUBWOO)
V: 1 V/div H: 10 msec/div



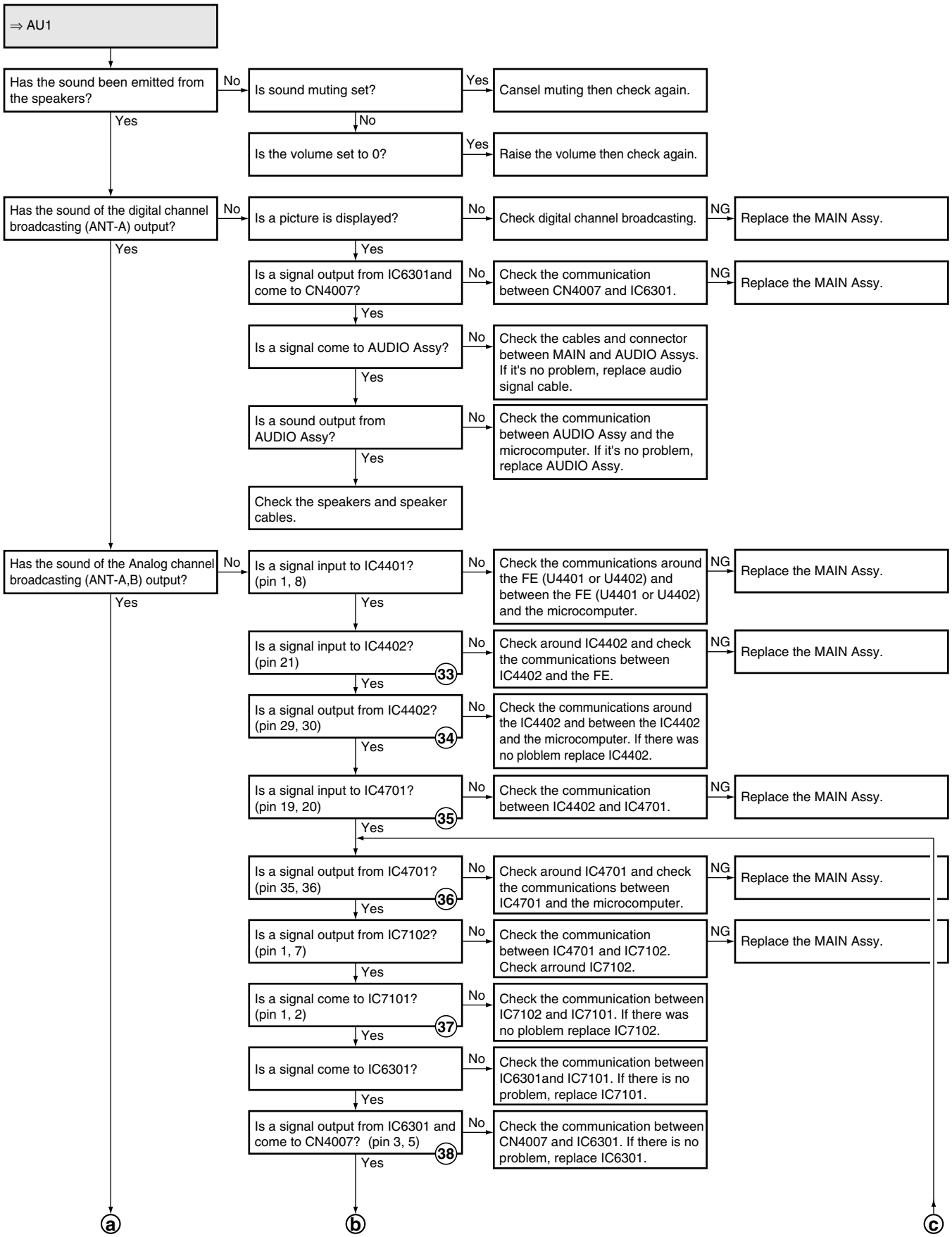
(32) IC4704 - pin 1, 7 (AC-SUBWOO)
V: 200 mV/div H: 4 msec/div

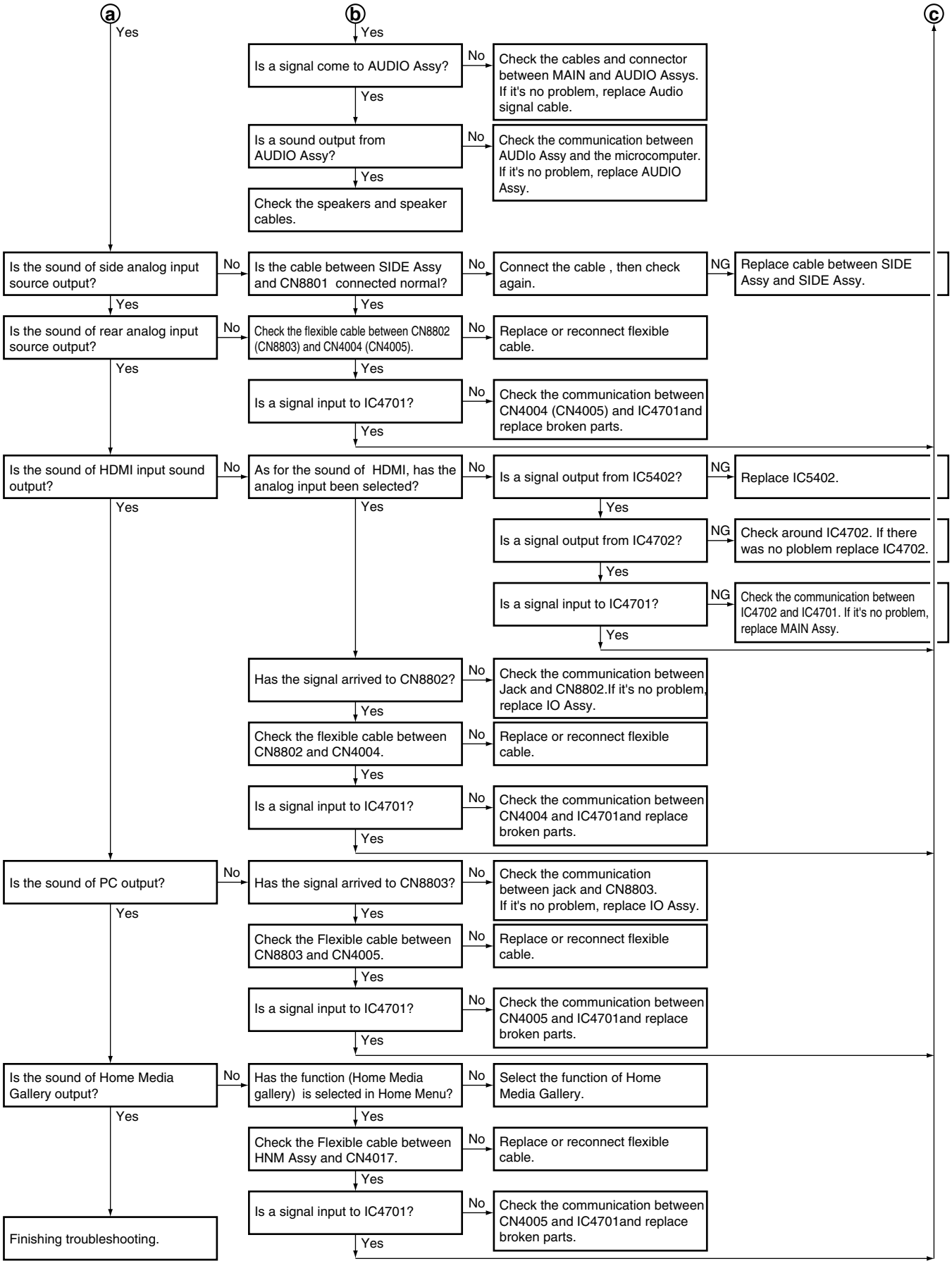


(32) IC4704 - pin 1, 7 (DC-SUBWOO)
V: 500 mV/div H: 4 msec/div



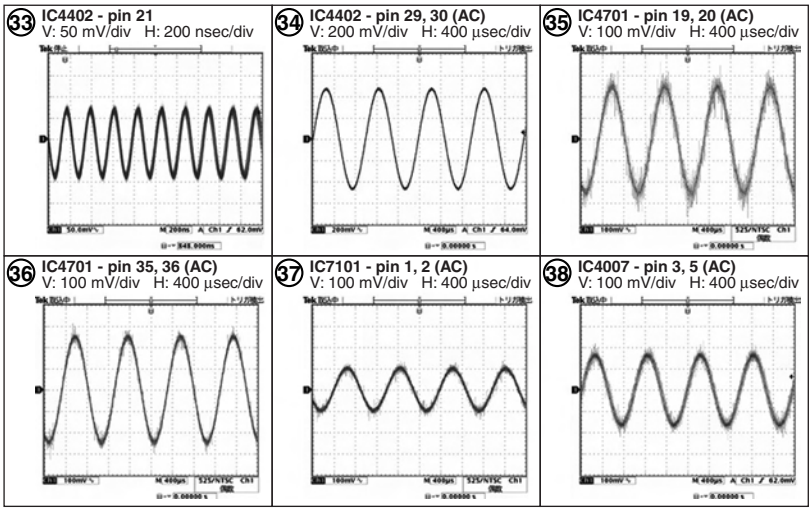
No sound from panel


⇒ AU1
Has the sound been emitted from the speakers?
No
Is sound muting set?
Yes
Cansel muting then check again.
Yes
No
Is the volume set to 0?
Yes
Raise the volume then check again.
Has the sound of the digital channel broadcasting (ANT-A) output?
No
Is a picture is displayed?
No
Check digital channel broadcasting.
NG
Replace the MAIN Assy.
Yes
Yes
Is a signal output from IC6301and come to CN4007?
No
Check the communication between CN4007 and IC6301.
NG
Replace the MAIN Assy.
Yes
Is a signal come to AUDIO Assy?
No
Check the cables and connector between MAIN and AUDIO Assys. If it's no problem, replace audio signal cable.
Yes
Is a sound output from AUDIO Assy?
No
Check the communication between AUDIO Assy and the microcomputer. If it's no problem, replace AUDIO Assy.
Yes
Check the speakers and speaker cables.
Has the sound of the Analog channel broadcasting (ANT-A,B) output?
No
Is a signal input to IC4401? (pin 1, 8)
No
Check the communications around the FE (U4401 or U4402) and between the FE (U4401 or U4402) and the microcomputer.
NG
Replace the MAIN Assy.
Yes
Yes
Is a signal input to IC4402? (pin 21)
33
No
Check around IC4402 and check the communications between IC4402 and the FE.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC4402? (pin 29, 30)
34
No
Check the communications around the IC4402 and between the IC4402 and the microcomputer. If there was no ploblem replace IC4402.
Yes
Is a signal input to IC4701? (pin 19, 20)
35
No
Check the communication between IC4402 and IC4701.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC4701? (pin 35, 36)
36
No
Check around IC4701 and check the communications between IC4701 and the microcomputer.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC7102? (pin 1, 7)
No
Check the communication between IC4701 and IC7102. Check arround IC7102.
NG
Replace the MAIN Assy.
Yes
Is a signal come to IC7101? (pin 1, 2)
37
No
Check the communication between IC7102 and IC7101. If there was no ploblem replace IC7102.
Yes
Is a signal come to IC6301?
No
Check the communication between IC6301and IC7101. If there is no problem, replace IC7101.
Yes
Is a signal output from IC6301 and come to CN4007? (pin 3, 5)
38
No
Check the communication between CN4007 and IC6301. If there is no problem, replace IC6301.
Yes
ⓐ
ⓑ
ⓒ

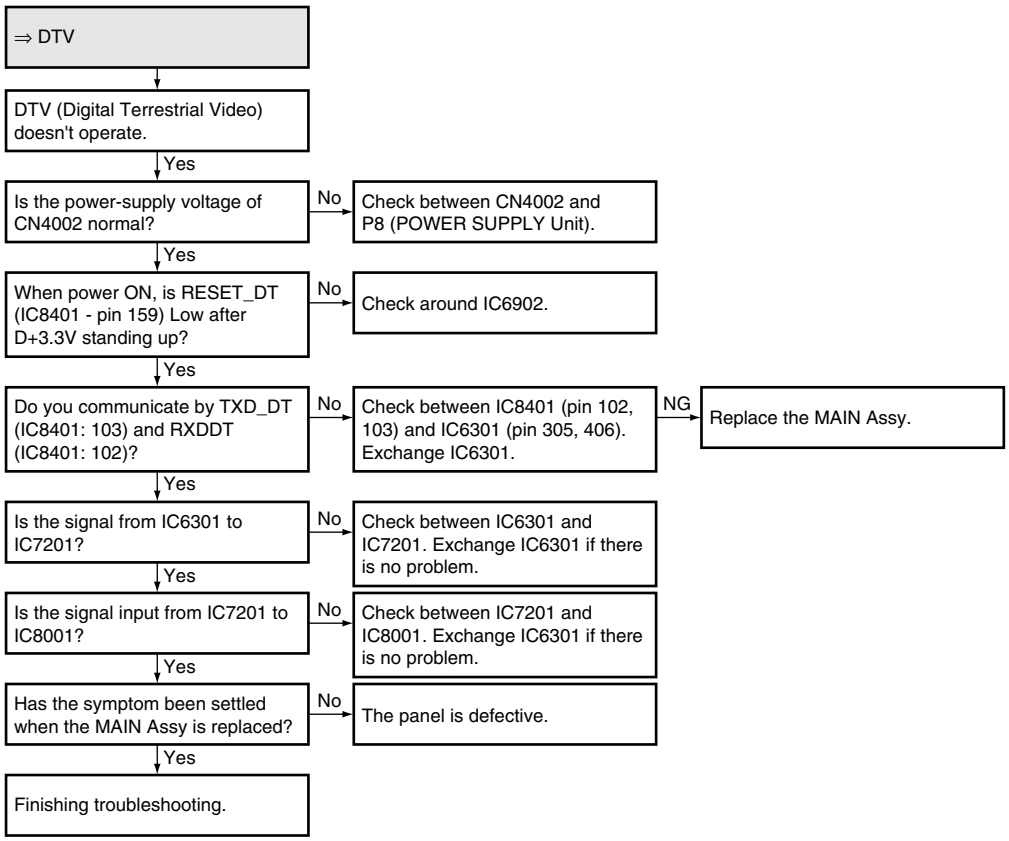

a
b
c
Yes
Is a signal come to AUDIO Assy?
No
Check the cables and connector between MAIN and AUDIO Assys. If it's no problem, replace Audio signal cable.
Is a sound output from AUDIO Assy?
Check the communication between AUDIo Assy and the microcomputer. If it's no problem, replace AUDIO Assy.
Check the speakers and speaker cables.
Is the sound of side analog input source output?
Is the cable between SIDE Assy and CN8801 connected normal?
Connect the cable , then check again.
NG
Replace cable between SIDE Assy and SIDE Assy.
Is the sound of rear analog input source output?
Check the flexible cable between CN8802 (CN8803) and CN4004 (CN4005).
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4004 (CN4005) and IC4701and replace broken parts.
Is the sound of HDMI input sound output?
As for the sound of HDMI, has the analog input been selected?
Is a signal output from IC5402?
Replace IC5402.
Is a signal output from IC4702?
Check around IC4702. If there was no ploblem replace IC4702.
Is a signal input to IC4701?
Check the communication between IC4702 and IC4701. If it's no problem, replace MAIN Assy.
Has the signal arrived to CN8802?
Check the communication between Jack and CN8802.If it's no problem, replace IO Assy.
Check the flexible cable between CN8802 and CN4004.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4004 and IC4701and replace broken parts.
Is the sound of PC output?
Has the signal arrived to CN8803?
Check the communication between jack and CN8803. If it's no problem, replace IO Assy.
Check the Flexible cable between CN8803 and CN4005.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4005 and IC4701and replace broken parts.
Is the sound of Home Media Gallery output?
Has the function (Home Media gallery) is selected in Home Menu?
Select the function of Home Media Gallery.
Check the Flexible cable between HNM Assy and CN4017.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4005 and IC4701and replace broken parts.
Finishing troubleshooting.

● Waveforms

Input signal: 1kHz
Sound volume is fixed to 25.


33 IC4402 - pin 21
V: 50 mV/div H: 200 nsec/div
34 IC4402 - pin 29, 30 (AC)
V: 200 mV/div H: 400 µsec/div
35 IC4701 - pin 19, 20 (AC)
V: 100 mV/div H: 400 µsec/div
36 IC4701 - pin 35, 36 (AC)
V: 100 mV/div H: 400 µsec/div
37 IC7101 - pin 1, 2 (AC)
V: 100 mV/div H: 400 µsec/div
38 IC4007 - pin 3, 5 (AC)
V: 100 mV/div H: 400 µsec/div

DTV doesn't work

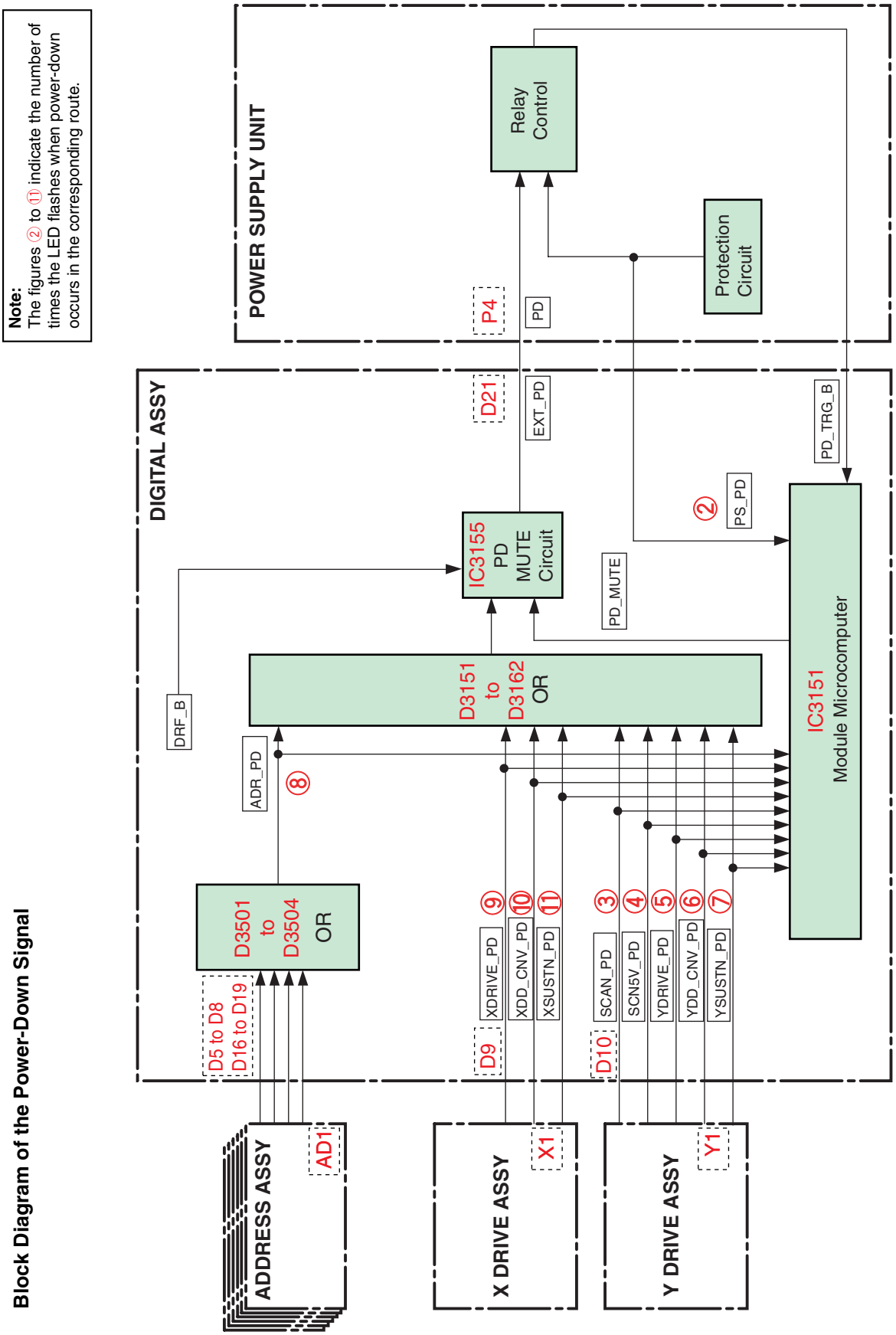

⇒ DTV
DTV (Digital Terrestrial Video) doesn't operate.
Yes
Is the power-supply voltage of CN4002 normal?
No
Check between CN4002 and P8 (POWER SUPPLY Unit).
Yes
When power ON, is RESET_DT (IC8401 - pin 159) Low after D+3.3V standing up?
No
Check around IC6902.
Yes
Do you communicate by TXD_DT (IC8401: 103) and RXDDT (IC8401: 102)?
No
Check between IC8401 (pin 102, 103) and IC6301 (pin 305, 406). Exchange IC6301.
NG
Replace the MAIN Assy.
Yes
Is the signal from IC6301 to IC7201?
No
Check between IC6301 and IC7201. Exchange IC6301 if there is no problem.
Yes
Is the signal input from IC7201 to IC8001?
No
Check between IC7201 and IC8001. Exchange IC6301 if there is no problem.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Finishing troubleshooting.

5.2 POWER DOWN

5.2.1 BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

■ Block Diagram of the Power-Down Signal

Note:
The figures ② to ⑪ indicate the number of times the LED flashes when power-down occurs in the corresponding route.



Block Diagram of the Power-Down Signal

5.2.2 POWER DOWN OF FAILURE ANALYSIS

PD (Power-down) diagnosis

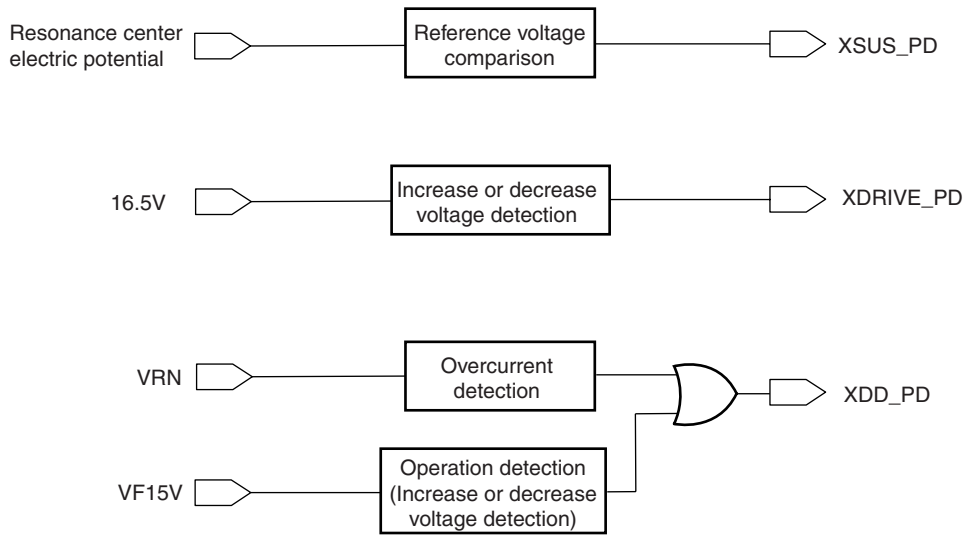
■ Prediction of failure symptoms when a PD (power-down) is generated

LED Flashing Count	PD Circuit	Checkpoint	Main Cause
2	Power supply PD	POWER SUPPLY Unit	Failure in the POWER SUPPLY Unit
		X, Y DRIVE Assy	MSK_MOD is damaged (short-circuiting between VS and GND)
		Each Assy	16.5V/ 12V/ 6.5V/ 5.1V short-circuit within one of PCB.
3	SCAN PD	SCAN Assy	SCAN IC is damaged (short-circuiting between VH and GNDH)
		Y DRIVE Assy	Connectors disconnected between the POWER SUPPLY Unit and the Y DRIVE Assy
			Connectors disconnected between the DIGITAL and the Y DRIVE Assys
			Failure in the VH power
4	IC5V PD	SCAN Assy	SCAN IC is damaged (short-circuiting between IC5V and GNDH)
			Disconnection of the scan-bridge (15-pin) connector
		Y DRIVE Assy	Failure in the photo coupler
			Abnormality in the IC5V DC/DC converter
5	Y-DRIVE PD	Y DRIVE Assy	Abnormality in the 16.5 V power
6	Y DCDC PD	Y DRIVE Assy	MSK_MOD is damaged (short-circuiting of the mask switch)
			Abnormality in the VOFS DC/DC converter
			Abnormality in the VPRST DC/DC converter
			Abnormality in VC_15V DC/DC converter
7	Y SUS PD	Y DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
8	Address PD	ADDRESS Assy	Short-circuiting of Vadr
			TCP damaged
9	X-DRIVE PD	X DRIVE Assy	Connectors disconnected between the DIGITAL and the X DRIVE Assys
			Abnormality in the 16.5 V power
10	X DCDC PD	X DRIVE Assy	Abnormality in VC_15V power
			Abnormality in VXNRST power
11	X SUS PD	X DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
			Connectors disconnected between the POWER SUPPLY Unit and the X DRIVE Assy

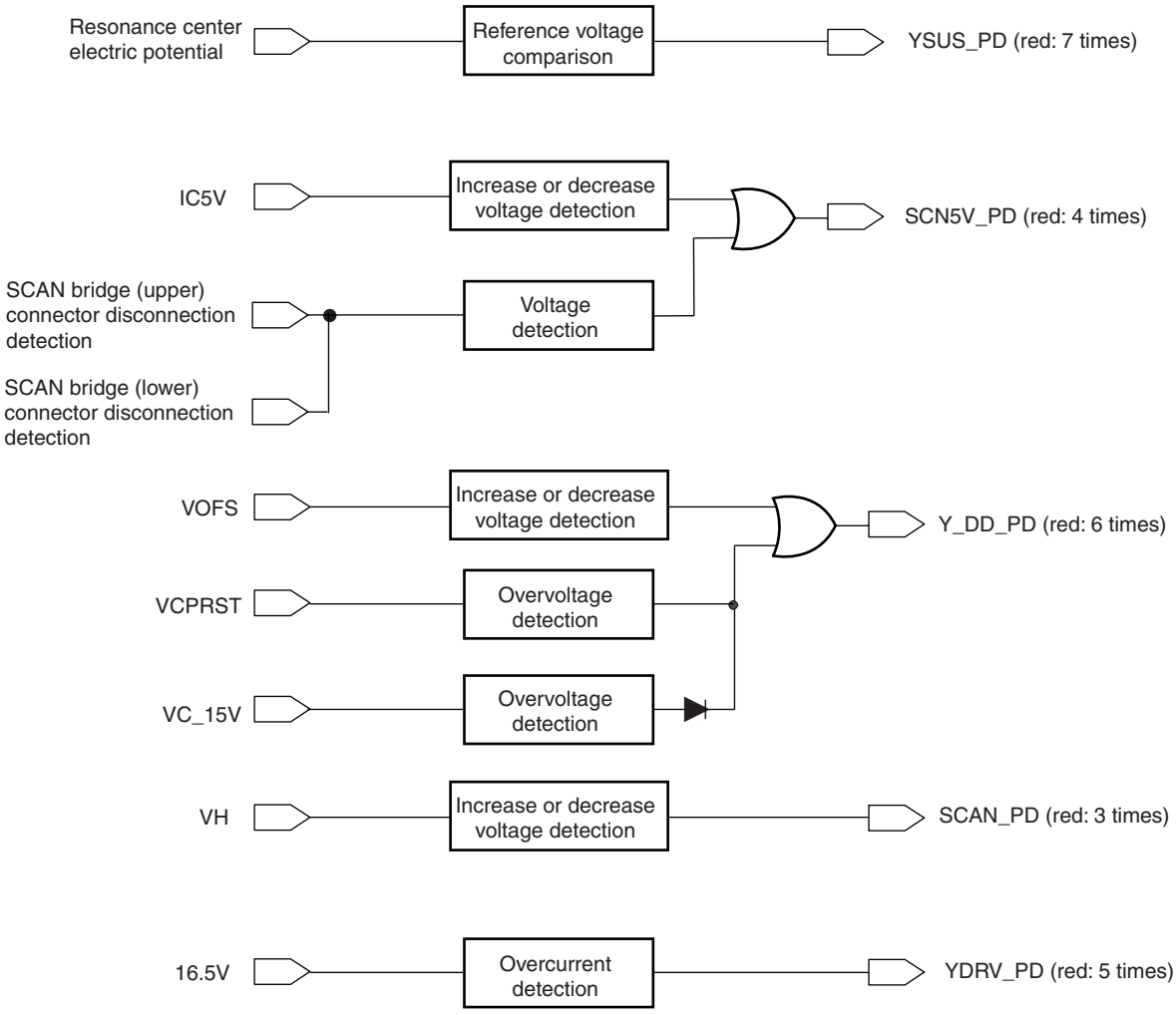
• List of detection of disconnected connectors

Assy Name	Connector	Connection Assy	Number of LED flashes	Screen Display
60 X DRIVE	CN1001	60 DIGITAL Assy	9 (X DRIVE)	
	CN1204	POWER SUPPLY Unit (ADR system)	–	White screen
	CN1206	POWER SUPPLY Unit (drive system)	10 (X-DCDC)	
	CN1201, CN1203	ADDRESS Assy	8 (ADR)	
60 Y DRIVE	CN2001	60 DIGITAL Assy	3 (SCAN)	
	CN2351	POWER SUPPLY Unit (drive system)	3 (SCAN)	
	CN2353	POWER SUPPLY Unit (ADR system)	–	White screen
	CN2354, CN2356	60 ADDRESS Assy	8 (ADR)	
	CN2401, CN2402	60 SCAN Assy	4 (SCN-5V)	
60 SCAN	CN2901, CN2801	60 Y DRIVE Assy	4 (SCN-5V)	
60 ADDRESS	CN1602, CN1802	60 DIGITAL Assy	8 (ADRS)	
	CN1601, CN1801	60 X/Y DRIVE Assy	8 (ADRS)	

X Drive PD system (FHD)



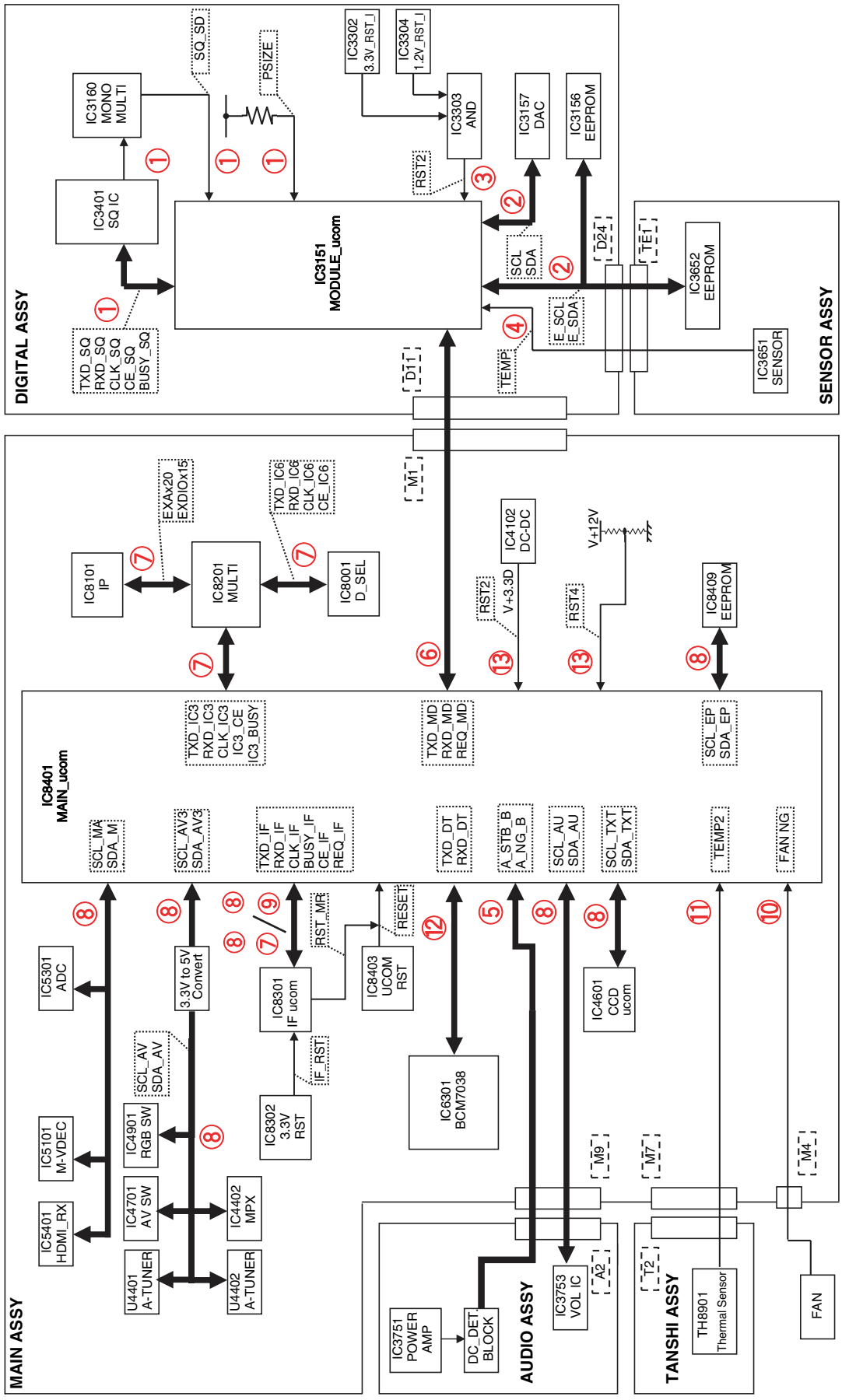
Y Drive PD system (FHD)



5.3 SHUT DOWN

5.3.1 BLOCK DIAGRAM OF THE SHUT-DOWN SIGNAL

■ Block Diagram of the Shutdown Signal



Block Diagram of the Shutdown Signal

Note : The figures ① to ⑬ indicate the number of times the LED flashes when shut-down occurs in the corresponding route.

■ SD (SHUT DOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		Checkpoint	Possible Defective Part	Remarks
			MAIN	SUB			
Blue 1	Abnormality in the Sequence Processor	Communication error	SQ-IC	RTRY	CLK_SQ/TXD_SQ, etc.	IC3151, IC3401	SQ_IC communication not established
		Drive stop		SQNO	Check if the video sync signal is input to IC3401.	CN3001, IC3401	If the signal detection by the module microcomputer is properly performed, the unit operates on an external sync.
		Busy		BUSY	BUSY_SQ	IC3401	If BUSY_SQ remains high, a shutdown is generated.
		Incoherent version (hardware, software)		VER-HS	Check the model number of the DIGITAL Assy and the destination of the sequence processor.	IC3301, IC3401	The written SQ_PROG is incoherent with data on the DIGITAL Assy.
Blue 2	Failure in IIC communication with the module microcomputer	DIGITAL Assy EEPROM	MD-IIC	EEPROM	IIC communication line of IC3156	IC3151, IC3156	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		SENSOR Assy EEPROM		BACKUP	IIC communication line of IC3652	IC3151, IC3652	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		DAC		DAC	IIC communication line of IC3157	IC3151, IC3157	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
Blue 3	Abnormality in RST2 power decrease	–	RST2	–	Is the output voltage of the DC-DC converter low?	AXY1135	If RST2 does not become high after the unit is turned on, a shutdown will be generated in several seconds.
					The 12 V power is not output.	POWER SUPPLY Unit	Check if V + 12 V is started.
Blue 4	High temperature of the panel	–	TMP_NG	TEMP1	Ambient temperature	–	If TEMP1 that is read by the module microcomputer is 75°C or higher, a shutdown will be generated.
					Abnormality in the panel temperature sensor	IC3651	Check the connection with the SENSOR Assy.
Blue 5	Short-circuiting of the speakers	–	AUDIO	–	Speaker terminals	CN3753, CN3901, JA3901	Check if any speaker cable is in contact with the chassis.
					AUDIO_AMP	IC3751	Check if the AMP output is short-circuited.
					Periphery of the cable between A2 and M8	CN3752, CN4007	Check if cables are firmly connected.
Blue 6	Failure in communication with the module microcomputer	–	MODULE	–	Communication line between MAIN and MOD	IC3151, IC8401	Check the communication lines (RXD_MOD/RXD_MOD/REQ_MOD).
					Periphery of the cable between D11 and M2	CN3001, CN4001	Check if cables are firmly connected.
Blue 7	Failure in main microcomputer 3-wire serial communication	IF microcomputer	MA-SRL	IF	Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
		MULTI		MULTI	Communication line between MULTI_M and MAIN	IC8201, IC8401	Check the communication lines (TXD_IC3/RXD_IC3/CLK_IC3/CE_IC3/IC3_BUSY).
				I/P	Bus communication line between IP and MULTI_M	IC8101, IC8201	Check the communication lines (EXA/EXDIO).
				D_SEL	Communication line between D_SEL and MULTI_M	IC8001, IC8201	Check the communication lines (TXD_IC6/RXD_IC6/CLK_IC6/CE_IC6).
Blue 8	Failure in IIC communication with the main microcomputer	AV Switch	MA-IIC	AV-SW	IIC communication line between AV_SW and MAIN	IC4701, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		RGB Switch		RGB-SW	IIC communication line between RGB_SW and MAIN	IC4901, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Analog Tuner		FE1	IIC communication line between A_Tuner and MAIN	U4401, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Analog Tuner		FE2	IIC communication line between A_Tuner and MAIN	U4402, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		MPX		MPX	IIC communication line between MPX and MAIN	IC4402, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Main VDEC		M-VDEC	IIC communication line between M_VDEC and MAIN	IC5101, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		AD/PLL		ADC	IIC communication line between ADC and MAIN	IC5301, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		HDMI		HDMI	IIC communication line between HDMI_RX and MAIN	IC5401, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		CCD		CCD	IIC communication line between CCD and MAIN	IC4601, IC8401	Check the communication lines (SCL_TXT/SDA_TXT).
		64K EEPROM		MA-EEP	IIC communication line between EEPROM and MAIN	IC8409, IC8401	Check the communication lines (SCL_EP/SDA_EP).
		VOLUME IC		AUDIO	IIC communication line between VOL_IC and MAIN	IC3753, IC8401	Check the communication lines (SCL_AUDIO/SDA_AUDIO).
		VOLUME IC		AUDIO	Periphery of the cable between A2 and M9	CN3752, CN4007	Check if cables are firmly connected.
Blue 9	Failure in communication with the main microcomputer and unknown	–	MAIN	–	Communication line between IF and MAIN	IC8301, IC8303, IC8304, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
Blue 10	Failure in the fan	–	FAN	–	Dirt attached to the fan motor	–	Check the fan.
					Periphery of the cable between fan and M4	CN4009	Check if cables are firmly connected.
					Periphery of the fan control regulator	IC8407	–
Blue 11	High temperature of the unit	–	TEMP2	–	Temperature sensor or its periphery	–	A shutdown is generated if TEMP2 becomes higher than 53°C
					Periphery of the temperature sensor	TH8901, Q8901	TEMP2
					Periphery of the cable between T2 and M7	CN8802, CN4004	Check if cables are firmly connected.
Blue 12	Digital Tuner	–	DTUNER	PS/RST	Startup of IC6301	IC6301	Check startup of BCM7038 and the communication line between IC6301 and MAIN.
				DEVICE	Communication line between MAIN and IC6301	IC6301	Check startup of BCM7038 and the communication line between IC6301 and MAIN.
				TV-G	Startup of the TV-GUIDE application	IC6301	Check startup of the TV-GUIDE application. (*)
				HOME-G	Startup of the HOME-G application	IC6301	Check BCM7038 and its peripheral devices.
Blue 13	Failure in the POWER SUPPLY Unit	DC-DC converter power decrease	MA-PWR	M-DCDC	DC-DC converter or its periphery, RST2	IC4102, Q4106	Check if V + 3.3 V is started.
		POWER SUPPLY		RELAY	The 12 V power is not output, RST4	–	Check if V + 12 V is started.
					Periphery of the cable between P8 and M2	CN4002	Check if cables are firmly connected.

(*) : Check if it becomes banner display when switching channel.

5.4 NON-FAILURE SYMPTOMS

■ Information on symptoms that do not constitute failure

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 5 or 6 signal is not correct.	The color setting for INPUT 5 or 6 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 5 or 6 is not displayed, and a message is displayed.	A unsupported video signal is input. Example: 1080p @ 60Hz
The audio signal input to the INPUT 5 or 6 pin jack is not output.	The audio setting for INPUT 5 or 6 is "AUTO," and a video signal is not input. If the audio setting is "AUTO," to output an analog audio signal, the DVI signal must be input via a DVI-HDMI conversion cable. When the DVI equipment is connected, the analog signals are selected with the setting "AUTO."
No sound of signals to INPUT 5 or 6 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
MONITOR video output	
The video output signal from the MONITOR connector is deteriorated. Or when the video output signal from the MONITOR connector is recorded, its playback picture is deteriorated.	The video signal output from the MONITOR connector is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 2, 3, or 4.	The video signal is not output from the MONITOR connector when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 5 or 6.	The video signal is not output from the MONITOR connector when the HDMI signal is selected.
MONITOR audio output	
The image displayed on the PDP is not synchronized with the sound from the MONITOR audio output.	The audio signal from the MONITOR connector is synchronized with the video output signal from the MONITOR connector.
DIGITAL audio output	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
The video output signal from the DIGITAL connector is not synchronized with that from the MONITOR video output.	The digital audio output signal from the DIGITAL connector is synchronized with the video signal that is currently displayed, and not with the MONITOR video output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off function is effective only while a video signal is being input.
The no-operation off function is not activated.	The no-operation off function is effective only while a video signal is being input.
Power management does not function.	Power management is effective only while a signal is being input from a PC.
The AUTO SETUP function is not activated.	The AUTO SETUP function is effective only while a signal is being input from a PC.
The G-Link system is not activated.	Wrong connection of the cable to the SR connector or PC audio connector is suspected.
Control via the SR connector is not possible.	A failure in the G-Link system or wrong connection of the cable to the PC audio connector is suspected.
The audio signal from the PC is not output.	A failure in the G-Link system or wrong connection of the cable to the SR connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON (default is OFF).
The display position of the screen slightly changes every time the unit is turned on.	The orbiter function for minimizing the effects of phosphor burn is activated. As ON/OFF of this function can only be changed on the Integrator menu, turning off of this function by a user is not possible.
The video signal to the S video connector is not displayed.	Although S video input is selected on the menu, the cable is connected via a component video input connector whose function type is the same as S video input.
The video signal to the composite video connector is not displayed.	Although the composite video input is selected on the menu, the cable is connected via a component video connector or S video connector whose function type is the same as the composite video input.

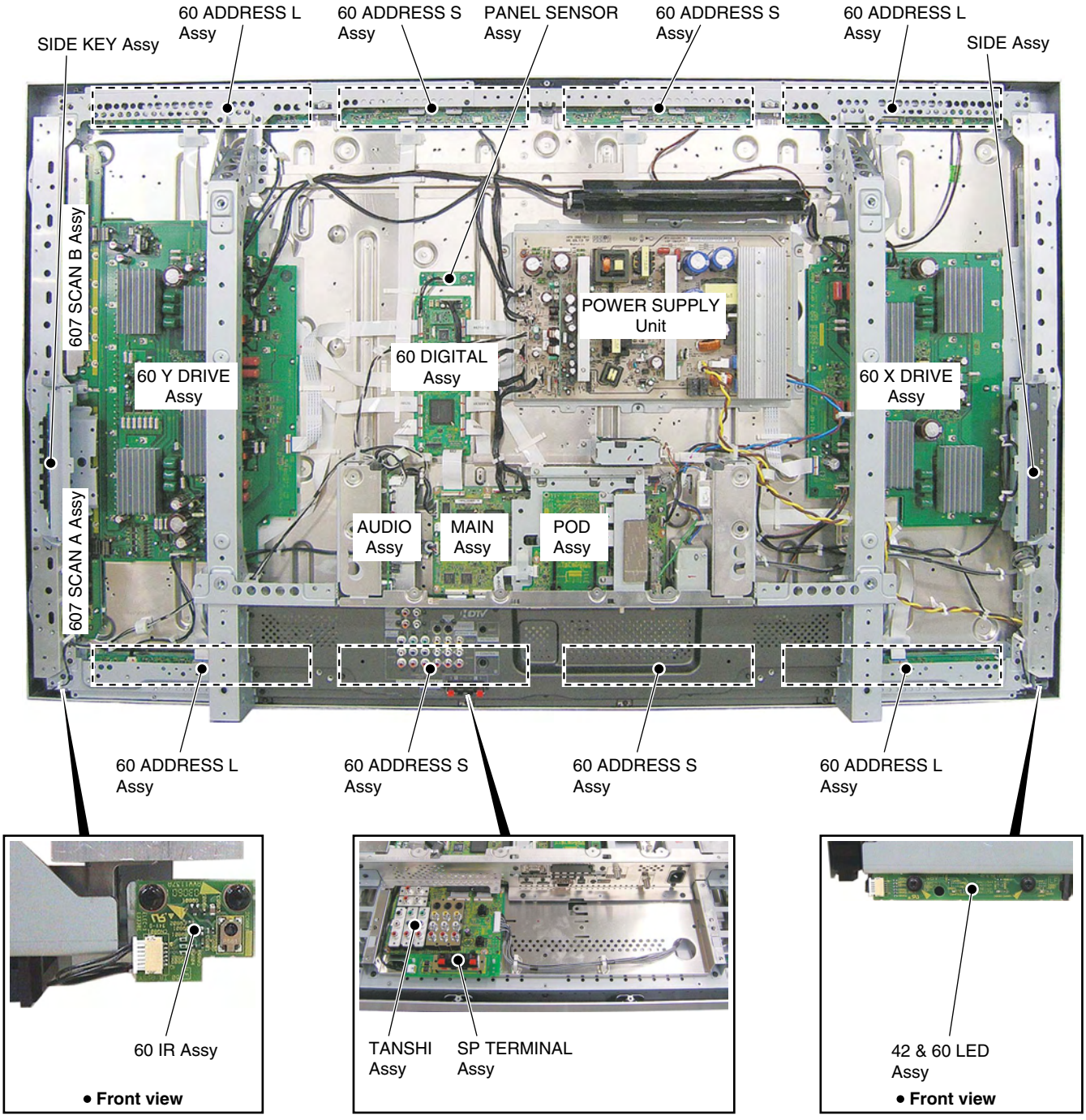
SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4.
(The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.
In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

6. DISASSEMBLY

6.1 PCB LOCATION

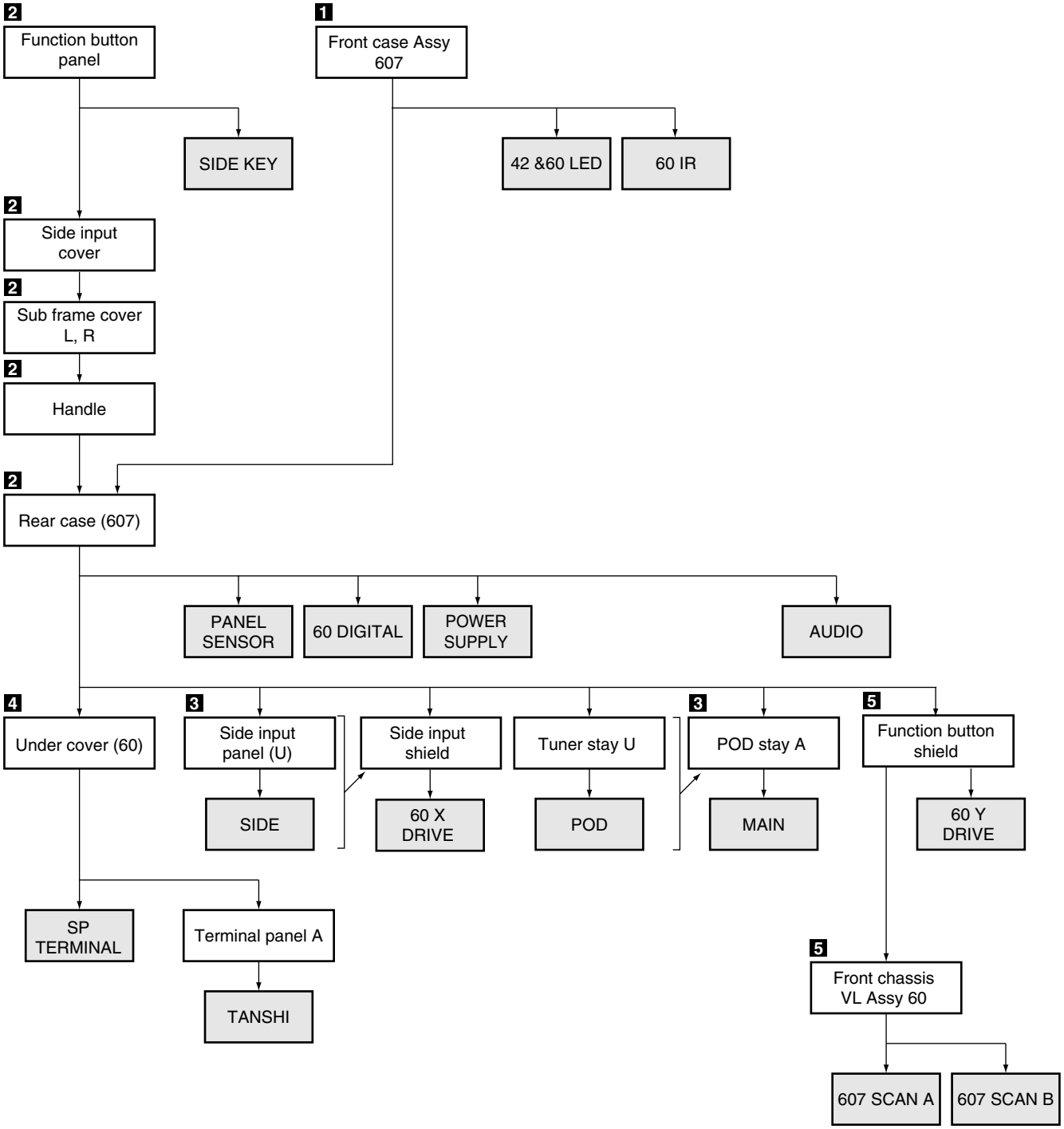


6.2 FLOWCHART OF THE MAIN PARTS AND PC BOARDS EXCHANGE

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Chart of removal order for the main parts and boards

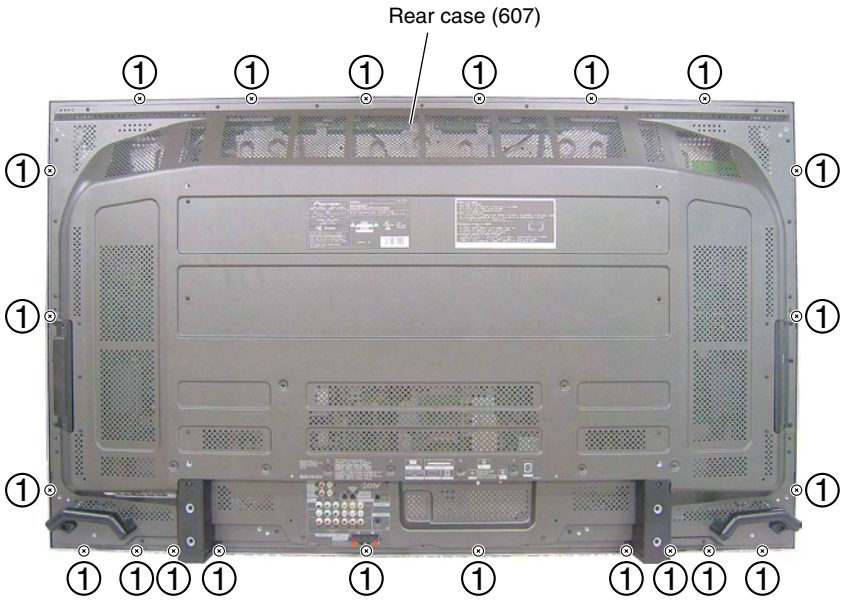
It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

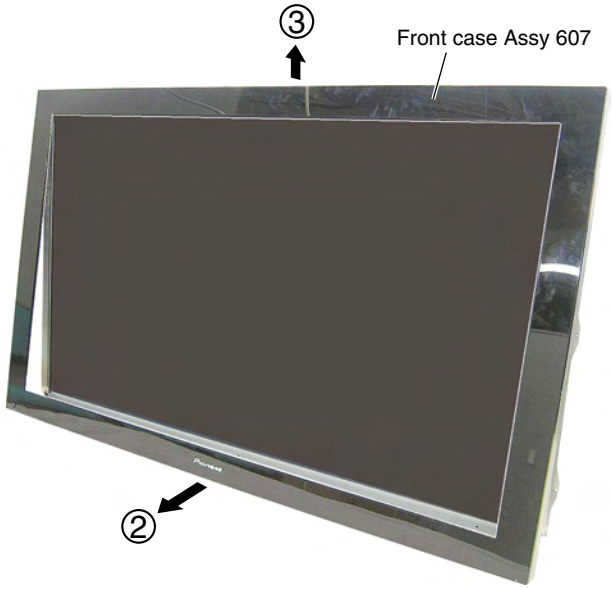
1 Front Case Assy 607

① Remove the 22 screws. (APZ30P100FTB)



② Pull the lower part of the Front case Assy 607 toward you and out.

③ Remove the Front case Assy 607, by pulling it upward.



2 Rear Case (607)

● **Function button panel**

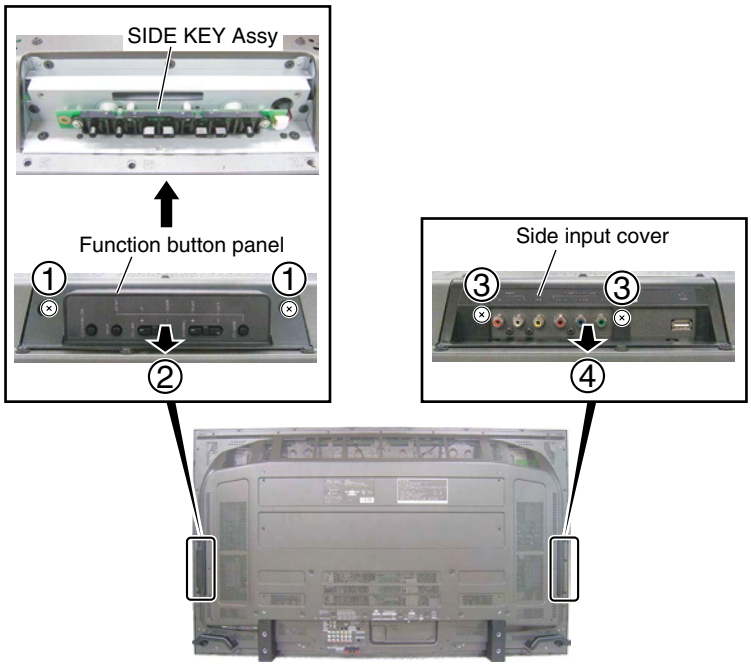
① Remove the two screws.

② Remove the function button panel.

● **Side input cover**

③ Remove the two screws.

④ Remove the side input cover.



● **Sub frame cover L and R**

① Remove the six screws. (PMB30P100FTB)

② Remove the sub frame covers L and R.

● **Handle**

③ Remove the four screws. (PMB40P120FTB)

④ Remove the two handles.

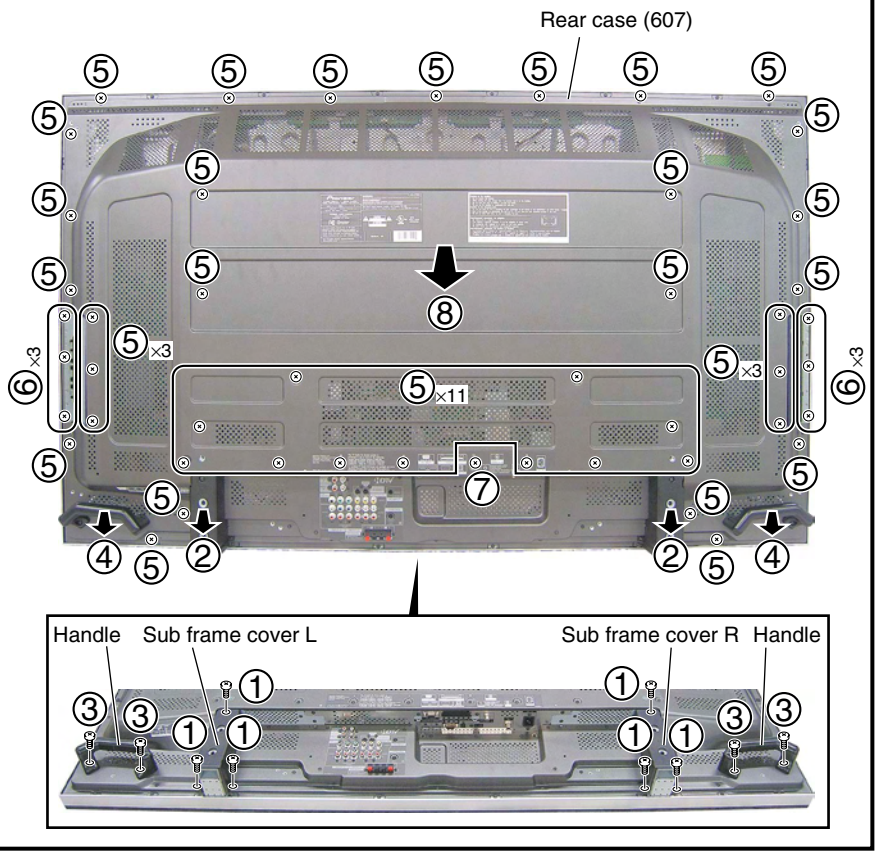
● **Rear case (607)**

⑤ Remove the 40 screws. (AMZ30P060FTB)

⑥ Remove the six screws. (APZ40P100FTB)

⑦ Remove the one screw. (ABA1341)

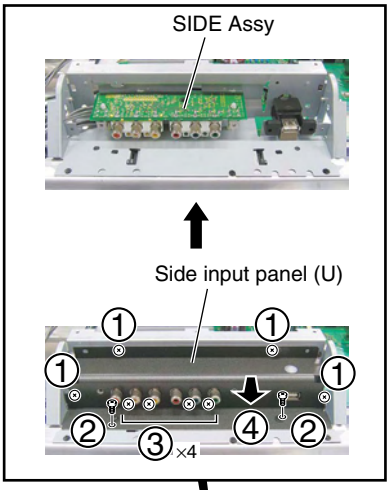
⑧ Remove the rear case (607).

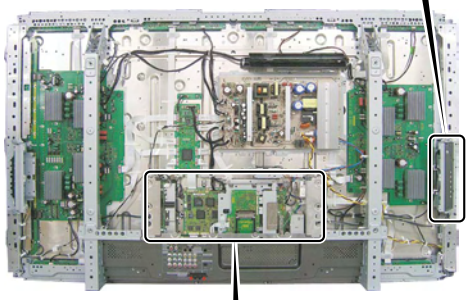


3 Access to PCB Assys

● SIDE Assy

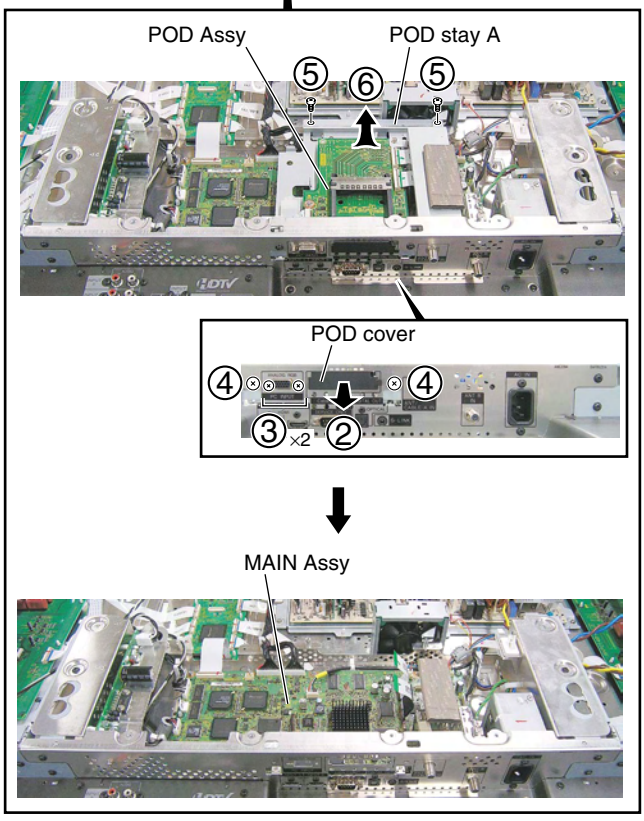
① Remove the four screws.
② Remove the two screws.
③ Remove the four screws.
④ Remove the side input panel (U).





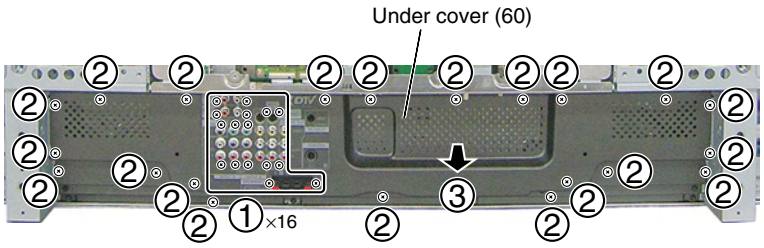
● MAIN Assy

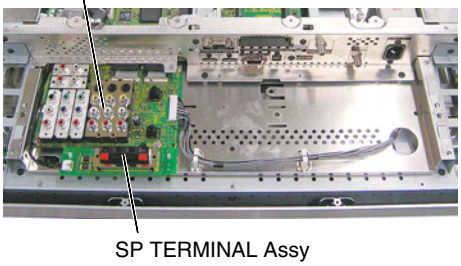
① Disconnect cables, connectors, as required.
② Remove the POD cover.
③ Remove the two hex. head screws.
④ Remove the two screws.
⑤ Remove the two screws.
⑥ Remove the POD stay A with PCB.



4 Under Cover (60)

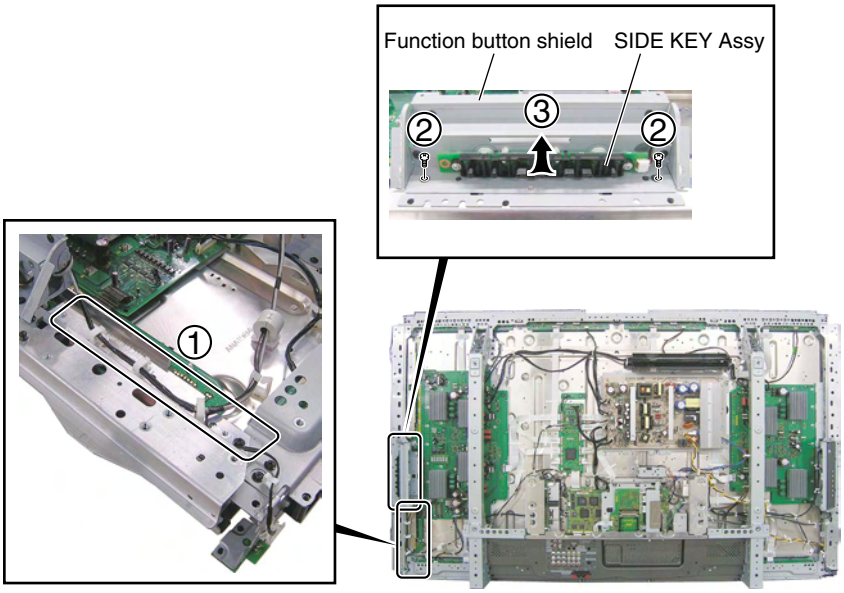
① Remove the 16 screws.
② Remove the 21 screws.
③ Remove the under cover (60).



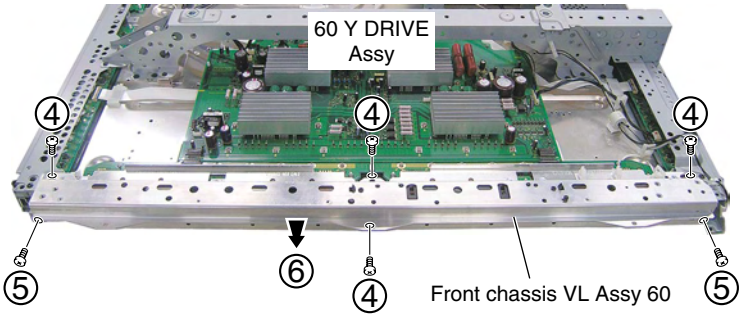


5 Exchange of 607 SCAN A and B Assys

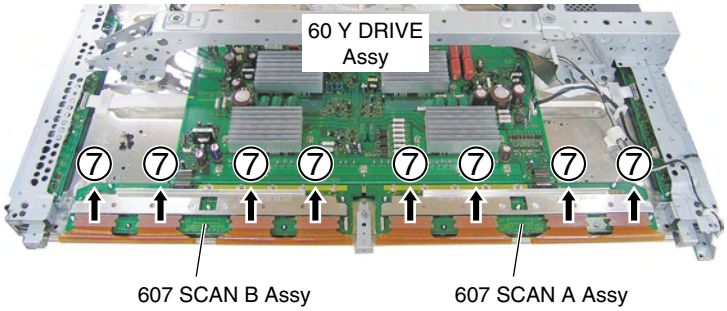
① Loosen the jumper wire.
② Remove the two screws.
③ Remove the function button shield with PCB.



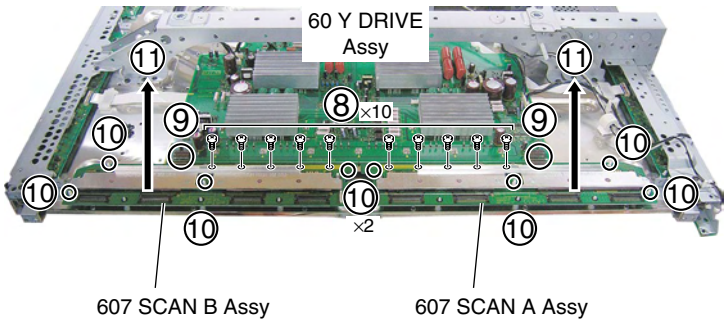
④ Remove the four screws.
⑤ Remove the two screws.
⑥ Remove the front chassis VL Assy 60.



⑦ Disconnect the eight connectors.



⑧ Remove the 10 screws.
⑨ Disconnect the two pin connectors.
⑩ Disconnect the 8 spacers.
⑪ Remove the 607 SCAN A and B Assys.



Exchange

7. ADJUSTMENT

7.1 PARTS CHANGE OF NOTES

1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

7.2 ADJUSTMENT REQUIRED WHEN THE SET IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	Refer to "7.7 HOW TO CLEAR HISTORY DATA" and "7.8 PROCEDURE WHEN REPLACING THE POWER SUPPLY UNIT".
60 DIGITAL Assy	➡	Writing of backup data is required. Refer to the "7.4 BACKUP WHEN THE PANEL UNIT IS ADJUSTED. "
60 X DRIVE Assy	➡	No adjustment required
60 Y DRIVE Assy	➡	No adjustment required
607 SCAN A Assy	➡	No adjustment required
607 SCAN B Assy	➡	No adjustment required
Service Panel Assy	➡	Refer to "7.5 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED" and "7.7 HOW TO CLEAR HISTORY DATA".
MAIN Assy (*)	➡	No adjustment required
SENSOR Assy	➡	Writing of backup data is required. Refer to the "7.4 BACKUP WHEN THE PANEL UNIT IS ADJUSTED. "
TANSHI Assy	➡	No adjustment required

Note: Checking the Cable Card ID

The PDP has a slot for a cable card that is used for managing your information by the cable TV company. The following procedure allows you to check your Cable Card ID and the Host ID.

1. Press HOME MENU.
2. Select “Tuner Setup”. (↑/↓ then ENTER)
3. Select “Channel Setup”. (←/→ then ENTER)
4. Select “POD ID”. (↑/↓)
   • The Host ID and Cable Card ID appear.
5. Press HOME MENU to exit the menu.

(*) : When replacing the MAIN Assy, be sure to do the FINAL SETUP.

7.3 ADJUSTMENT REQUIRED WHEN PART IS REPLACED

Notes on replacing parts

For the parts described in the list below, replacement is required for the whole Assy, not only the defective part.
If any part listed below is identified as defective and needs replacement, replace the whole Assy, and make necessary adjustments after replacement.

Reason: The whole Assy must be replaced, because adjustments and data rewriting for the Assy at the level of production line are required.

PCB Assy No.	Function Name	Parts that Require Whole-Assy Replacement		
		Ref No.	Function Name	Part No.
AWW1190	60 DIGITAL Assy	IC3151	Module microcomputer	AGC1011
		IC3401	Sequence IC	PEG122C
		IC3301	Flash memory	AGC1026
		IC3156	EEPROM	BR24L04FJ-W
AWW1191	SENSOR Assy	IC3652	EEPROM	BR24L02FJ-W
AWV2312	MAIN Assy	IC4701	AV switch	R2S11002AFT
		IC4901	RGB switch	R2S11001FT
		IC5101	Main VDEC	UPD64015GM-UEU
		IC5301	A/D converter	AD9985KSTZ-110
		IC6201	System IC	BCM3517KQLGB0
		IC6602	DDR-SDRAM	EDD2516AKTA-6B
		IC6603	DDR-SDRAM	EDD2516AKTA-6B
		IC6604	DDR-SDRAM	EDD2516AKTA-6B
		IC6605	DDR-SDRAM	EDD2516AKTA-6B
		IC6902	NOR Flash	AGC1008
		IC8202	Flash ROM	AGC1007
		IC8402	Flash ROM	AGC1006

POWER SUPPLY Unit ➡ The assembly must be replaced as a unit, and no part replacement is allowed.

MAIN Assy (*) ➡ No adjustment is required after replacement of parts other than those mentioned above.

60 DIGITAL Assy ➡ No adjustment is required after replacement of parts other than those mentioned above.

60 X DRIVE Assy ➡ After any of the parts shown below on the 60 X DRIVE or 60 Y DRIVE Assy are replaced, a waveform adjustment is required.

60 Y DRIVE Assy ➡

Object parts

Assy	Ref. No.	Part Category	Part No.
60 X DRIVE Assy	IC1206	Photo Coupler	PS9117-TLB
	IC1207	FET Driver	TND307TD-TBB
	IC1210	FET Driver	TND307TD-TBB
60 Y DRIVE Assy	IC2242	Photo Coupler	PS9117-TLB
	IC2241	FET Driver	TND307TD-TBB
	IC2252	FET Driver	TND307TD-TBB

Refer to "7.6 ADJUSTMENTS WHEN THE DRIVE ASSY ARE REPLACED".

60 ADDRESS Assy ➡ No adjustment required

SENSOR Assy ➡ No adjustment is required after replacement of parts other than those mentioned above.

TANSHI Assy ➡ No adjustment required

(*) : When replacing the MAIN Assy, be sure to do the FINAL SETUP.

7.4 BACKUP WHEN THE PANEL UNIT IS ADJUSTED

■ Outline

Adjustment data are stored in the EEPROM (IC3156/4K) on the DIGITAL Assy in the production process. Those adjustment data are also automatically stored in the EEPROM (for backup: IC3652) on the SENSOR Assy.
If the DIGITAL Assy is replaced, those adjustment data for backup can be copied from the EEPROM on the SENSOR Assy to a new DIGITAL Assy.

■ Backed up data

- Drive voltage adjustment value
- Hour-meter count
- Pulse-meter count
- Panel white balance adjustment value
- Serial No.
- Drive waveform adjustment value
- P-ON counter value
- PD/SD histories

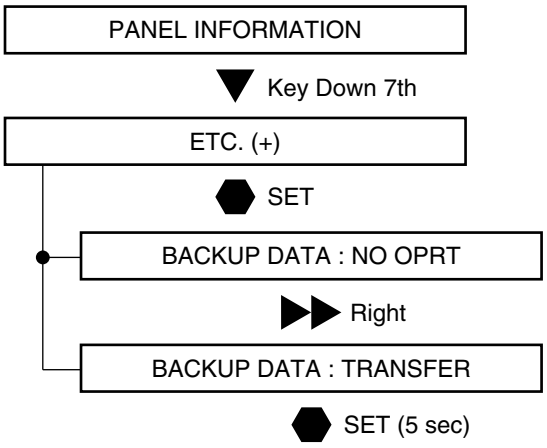
■ How to copy backup data

1. When the DIGITAL Assy is replaced with one for service (usual service)

Adjustment data can be restored by copying the data backed up in the SENSOR Assy to the EEPROM on a new DIGITAL Assy.
The EEPROM on the new DIGITAL Assy has no adjustment data, and the EEPROM for backup in the SENSOR Assy has adjustment data. After replacing the DIGITAL Assy, enter PANEL FACT. mode, display the PANEL INFORMATION page, then check if "NO DATA!" is set for "DIG. EEP" and "ADJUSTED" is set for "BACKUP". Then, proceed in the following steps:

(1) Copying, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



③ Turn the power off.

- After the DIGITAL Assy is replaced with one for service, be sure to check if "NO DATA!" is set for "DIG. EEP" on the PANEL INFORMATION page of the PANEL FACT. mode.
- If copying of the backup data fails in the above procedure, the red LED lights, and the blue LED flashes, as a warning that no backup data were copied.
- If both the DIGITAL and SENSOR Assys are to be replaced, first replace the SENSOR Assy, turn the unit on and back off again, then replace the DIGITAL Assy.

(2) Copying, using the RS-232C commands

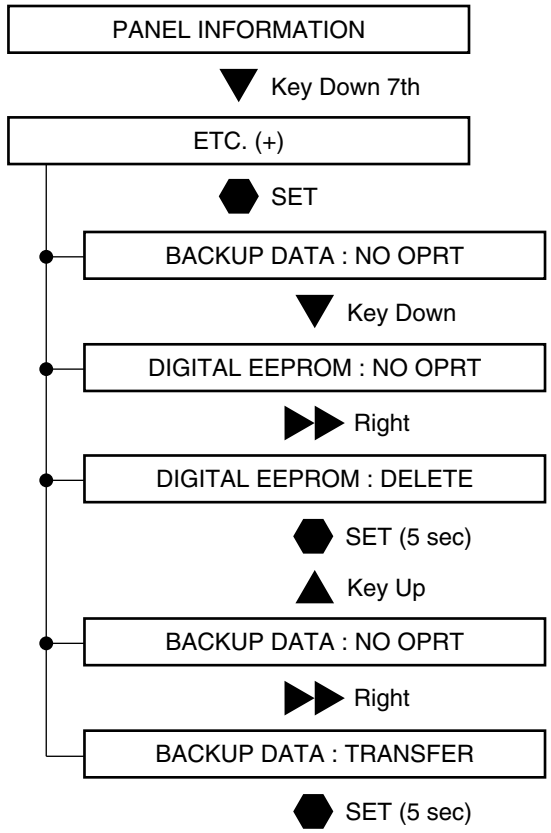
① Switch the RS-232C/SR+ setting to RS-232C so that RS-232C commands can be received.
② Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
③ Issue the BCP command to transfer the data stored in the EEPROM for backup.
④ Turn the power off.

2. When a secondhand DIGITAL Assy that had been mounted in another product is to be reused

As adjustment data for another product are already stored in the secondhand DIGITAL Assy, first delete those data then copy the backup data stored in the EEPROM on the SENSOR Assy.

(1) Copying, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



③ Turn the power off.

Note:
If the secondhand DIGITAL Assy is mounted in the product then the unit is turned on then back off again, the data in the EEPROM on the DIGITAL Assy are copied over the EEPROM in the SENSOR Assy. Thus the backup data can never be restored. During the first power-on after the DIGITAL Assy is replaced, be sure to enter Factory mode to copy the backup data. Or, before removing the secondhand DIGITAL Assy from the original product, delete the adjustment data on it, using the Factory mode (DIGITAL EEPROM: DELETE), mount it to the product to be repaired, then copy the data from the backup EEPROM.

(2) Copying, using the RS-232C commands

① Switch the RS-232C/SR+ setting to RS-232C so that RS-232C commands can be received.
② Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
③ Issue the UAJ command to delete data stored in the EEPROM on the DIGITAL Assy.
④ Issue the BCP command to transfer the data stored in the EEPROM for backup.
⑤ Turn the power off.

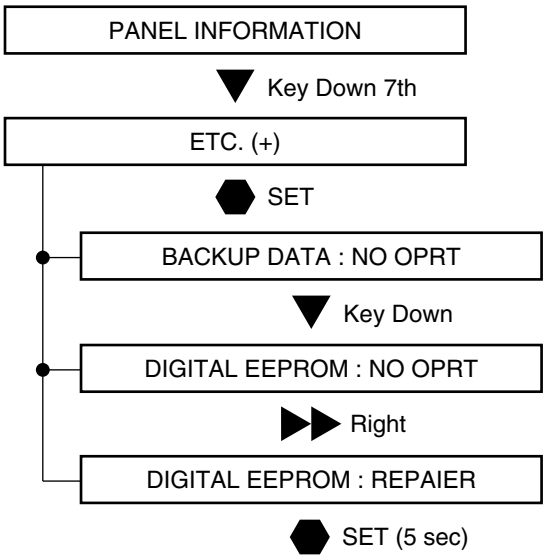
3. In a case where normal backup data are not stored in the backup EEPROM because the EEPROM on the DIGITAL Assy is defective, etc., and where manually adjusted values are to be applied to the product

Note: In this section, it is assumed that settings for various items have been completed, using Factory menu or RS-232C commands.

(1) Method using the Factory menu

① Set various setting/adjustment values.

② Proceed in the following steps.



③ Turn the power off.

Note:
When a DIGITAL Assy with an EEPROM in which adjustment data are stored is mounted, this step is not required after manual adjustment. ("DIGITAL EEPROM: REPAIR" is not indicated.)

(2) Method using the RS-232C commands

Issue the FAJ command.

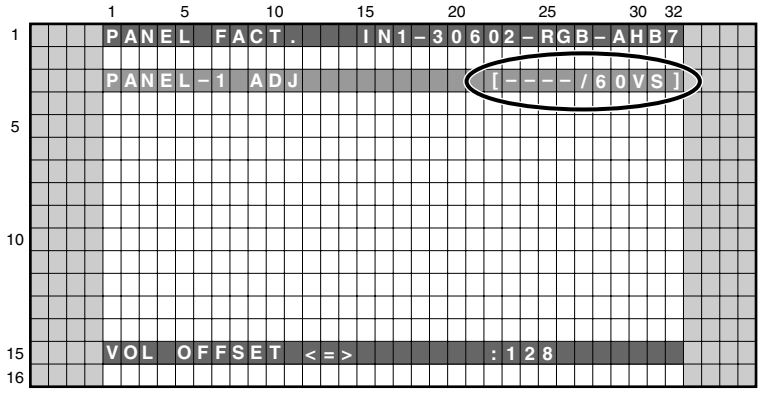
7.5 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED

■ Flowchart for panel replacement

After replacing the panel with one for service, readjustment of the Vofs voltage margin is required.

[Preparations]

- Basically, the Panel Factory menu is used for the voltage margin adjustment.
- The 60-Hz video sequence is used as the drive sequence.
- While adjusting the voltage margin using the Panel Factory menu, the current drive sequence is indicated on the screen, as shown below. Make sure that "60VS" is always indicated during adjustment.



Example of the OSD while the Panel Factory menu is displayed

[Supplement]

- When the raster mask for margin adjustment is displayed during Panel Factory mode, the Panel White Balance is set to default, and the Panel Gamma is set to Straight in the "PANEL-1 ADJ" layer.
  On the third line, the OSD reads "- - - - /****" (**** stands for the type of the drive sequence set).

- If you perform adjustment using RS-232C commands, use the commands shown below.
  These commands are different from those used during Factory Menu mode.

  PAV S00 : Used to set the Panel Drive mode to Factory.
  VFQ S03 : Used to set the Drive Sequence to Video 60 Hz.
  WBI S01 : Used to temporarily set the adjustment value of the Panel WB to default. (To return the value to its original value, use WBI S00.)
  PGM S00 : Used to set the gamma setting to Factory.

Note: If the power is shut off in the process of the adjustment procedures, send the above commands again.

OUTLINE

Mode switching

Switch modes to start the voltage adjustment, as follows:

Enter Factory mode.
Display RST MASK 01 (white).

FAY
MKS S51

Voltage setting

Set Vsus and Vyprst, and tentatively set Vofs:

VOL SUS : Set to 136 (207[V]).
VOL RST P : Set to the voltage indicated on the panel label.
VOL OFFSET : Tentatively set to the voltage indicated on the panel label.

VSU136
VRP***
VOF***

Aging

Perform aging with the fully white screen for 10 minutes

To prevent an error caused by the temperature characteristics and to let the unit show its full properties after letting it sit, perform aging for 10 minutes to raise the panel temperature to a certain extent. This ensures the accuracy of inspection and adjustment.

Actual Vofs adjustment (② to ⑥)

Measuring the lower limit of Vofs

Signals to be measured: Pale purple, Sky color, Yellow egg color

Measuring the upper limit of Vofs

Signals to be measured: red 1023+, green 1023+, and blue 1023+

Vofs setting

In a case where the margin of Vofs is between 19 and 22 [V]:
Vofs set voltage = Vofs_max - 8 [V]

In a case where the margin of Vofs is 23 [V] or more:
Vofs set voltage = Vofs_max - 12 [V]

CA check with black

With the black mask displayed, check if there are stationary or horizontally moving lit cells.

Confirmation of settings

Check that each voltage value is correctly set.

Command transfer

After the voltage adjustment is finished, make the following settings:

Mask: OFF, Factory: OUT

Confirmation of setting data

Check that the each voltage is properly set.

→

CA check

Check that the picture is properly displayed.

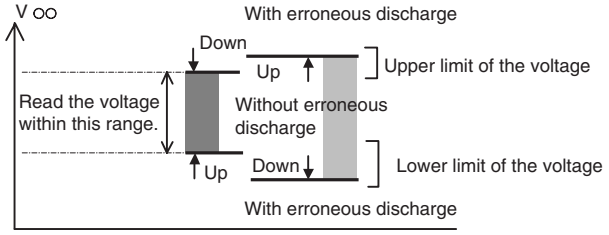
Use DVD, LD, and broadcast signals for checking.

Ranges of the adjustable voltages
(Ranges of the adjustable voltage when the upper and lower limits of each voltage are to be checked in this flowchart)
Vsus = 207 [136] [V]
Vofs = 15 [024] to 60 [255] [V]
Vyprst = 240 [000] to 302 [158] [V]
Vxnrst = 180 [V]
Vh = 130 [V]
Vadr = 60 [V]

Ranges of the voltage settings
(Ranges of voltage settings for this unit)
Vsus = 207 [136] [V]
Vofs = 24 [071] to 49 [199] [V]
Vyprst = 250 [026] to 310 [179] [V]
Vxnrst = 180 [V]
Vh = 130 [V]
Vadr = 60 [V]

When calculating the voltage, **round off the fractional part**.
(For circuit protection, it is desirable to set the voltage to a lower value.)

For margin measuring, be sure to read the value within the hysteresis (stricter value).



The Definition of Abnormal Cells
Abnormal bright cells: Within five cells on screen.
(fewer than 2 cells within a radius of 1 cm)

Abnormal dark cells: Under fifteen cells on screen.
(fewer than 2 cells within a radius of 1 cm)

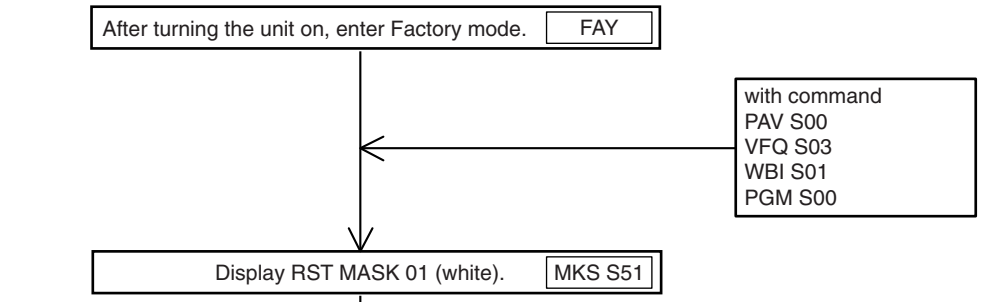
Count abnormal cells at a distance of 1 m from panel.
If abnormal cells won't occur longer than one second, do not count the abnormal cells.
Do not count still dark cells and bright cells.

Standard settings of the unit at shipment:
Vsus setting = 207 [V]
Vsus margin = 17 [V] or more
Vofs setting = 24 to 49 [V]
Vofs margin = 19 [V] or more
Vyprst setting = 250 to 300 [V]

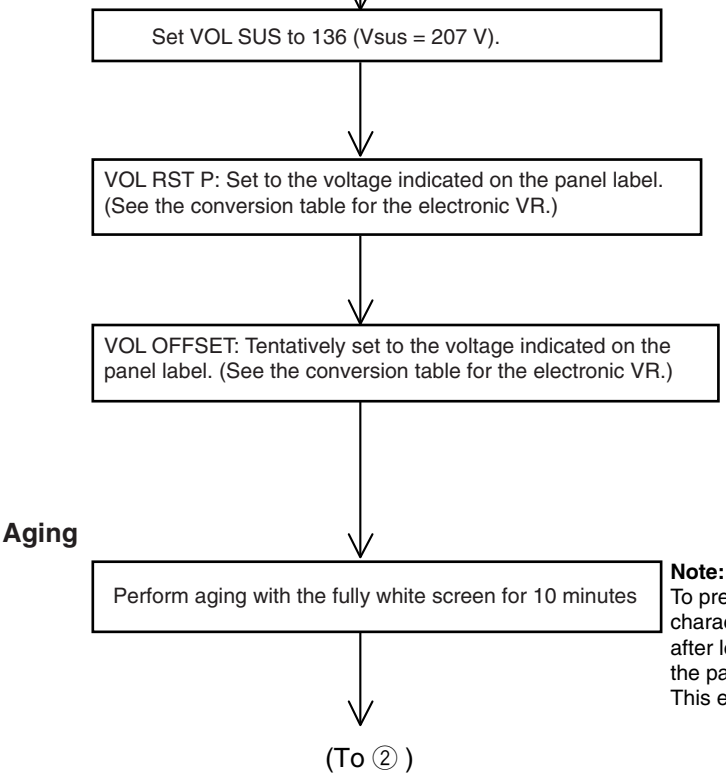
Note: The voltages in the flowcharts are given in absolute values (without ±).

① Preparations

Initial setting



Voltage setting

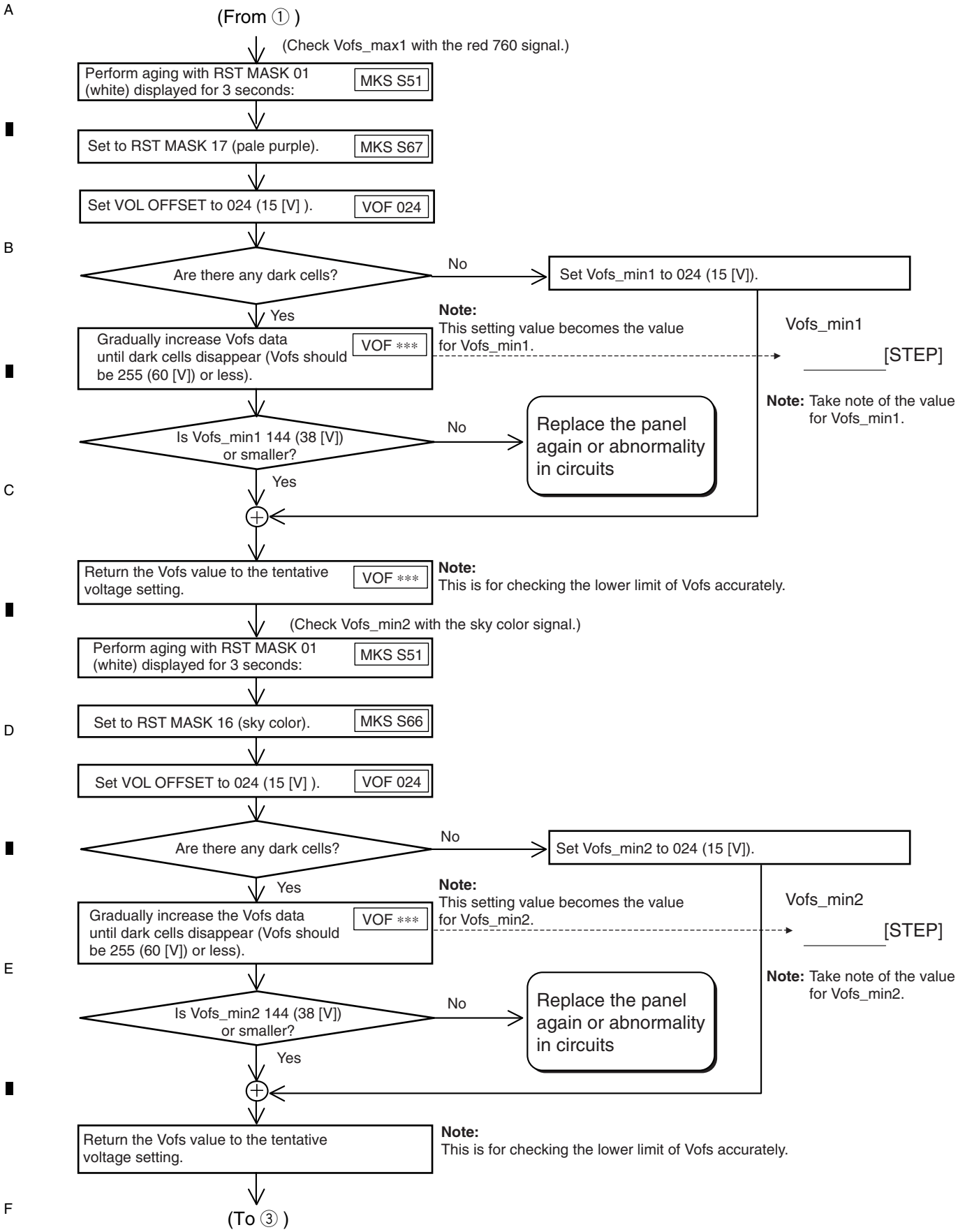

Set VOL SUS to 136 (Vsus = 207 V).
VOL RST P: Set to the voltage indicated on the panel label.
(See the conversion table for the electronic VR.)
VOL OFFSET: Tentatively set to the voltage indicated on the panel label. (See the conversion table for the electronic VR.)

Aging

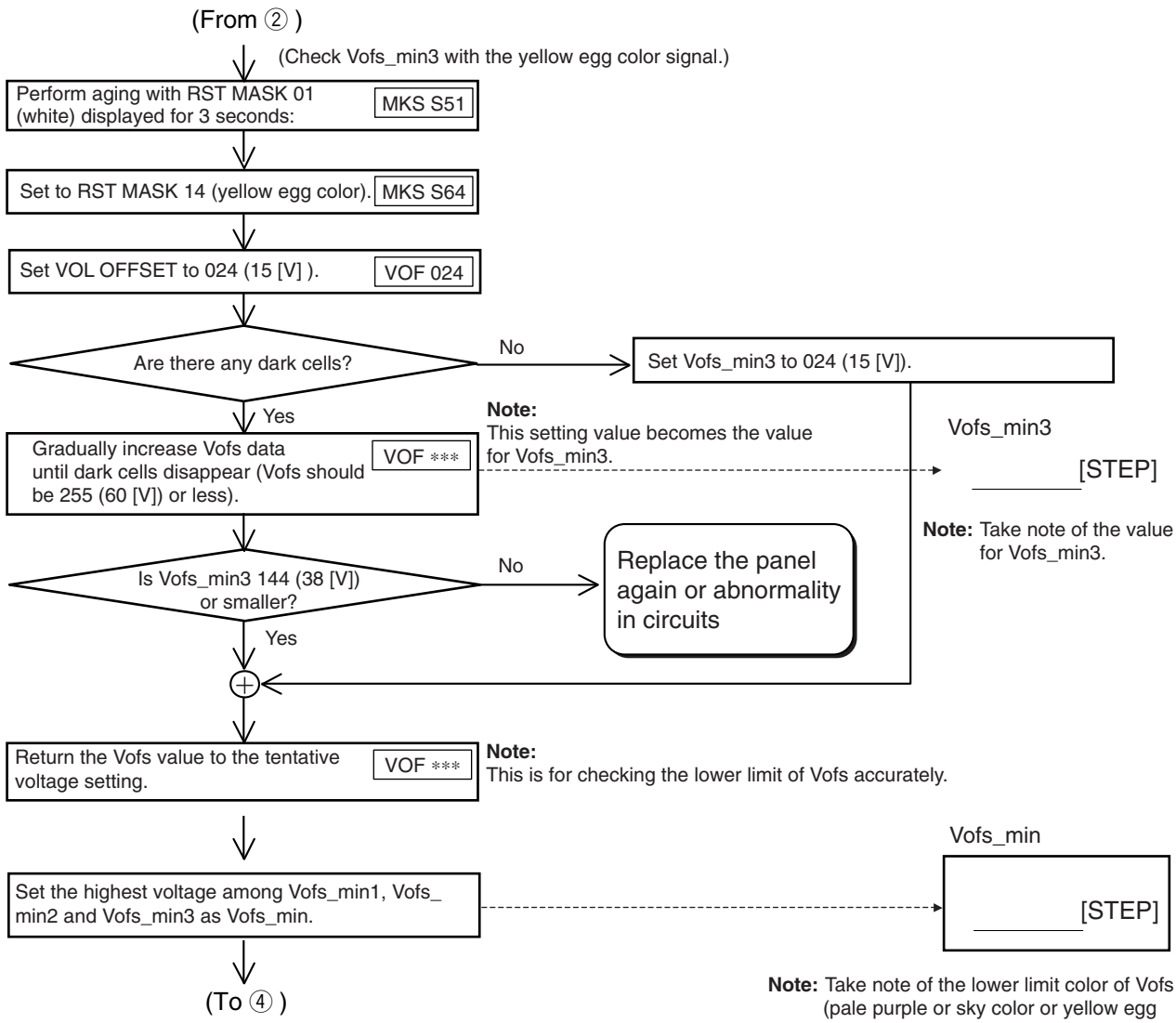
Note:
To prevent an error caused by the temperature characteristics and to let the unit show its full properties after letting it sit, perform aging for 10 minutes to raise the panel temperature to a certain extent.
This ensures the accuracy of inspection and adjustment.

(To ②)

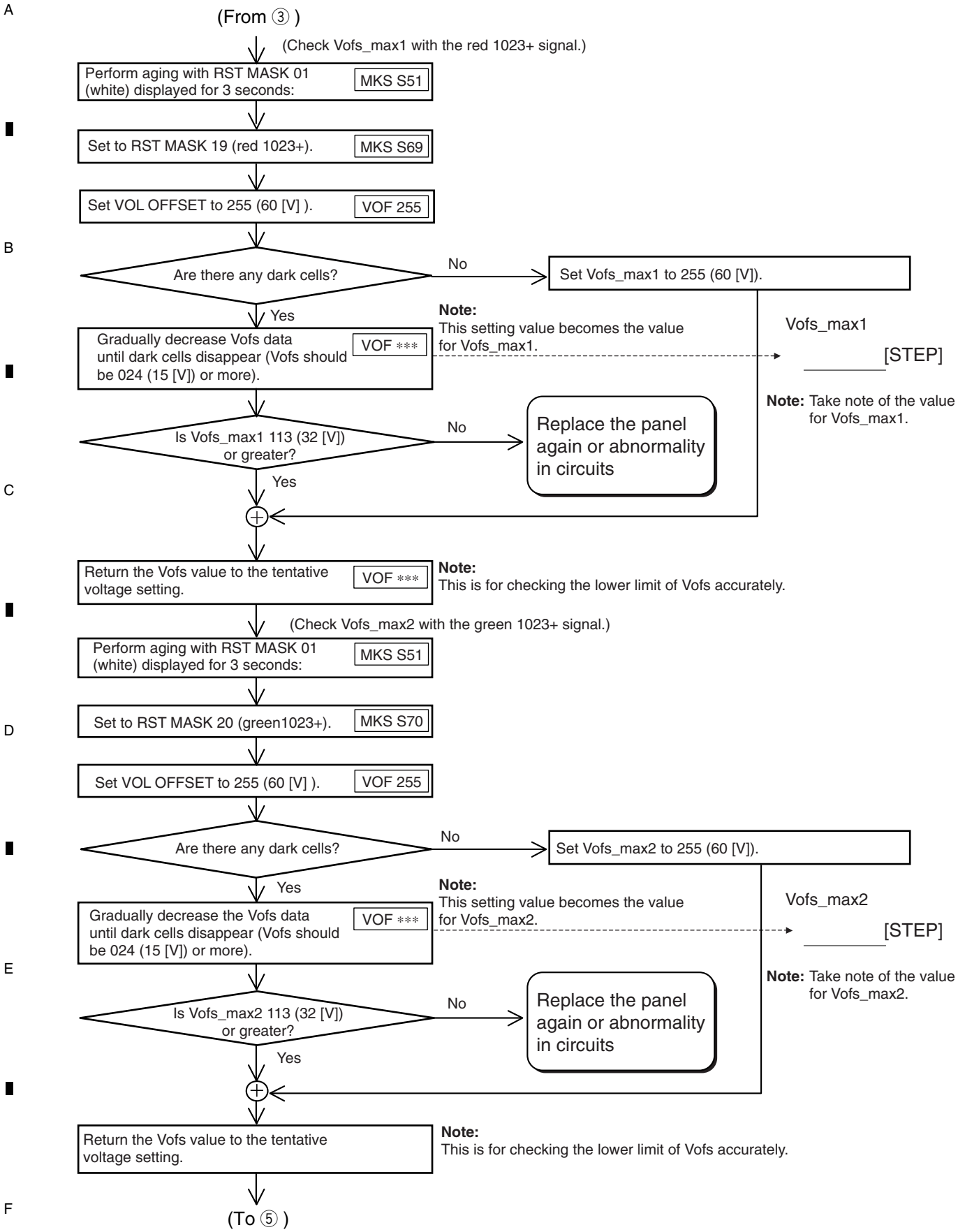
② Actual Vofs adjustment (1)


(From ①)
(Check Vofs_max1 with the red 760 signal.)
Perform aging with RST MASK 01 (white) displayed for 3 seconds:
MKS S51
Set to RST MASK 17 (pale purple).
MKS S67
Set VOL OFFSET to 024 (15 [V]).
VOF 024
Are there any dark cells?
No
Set Vofs_min1 to 024 (15 [V]).
Yes
Gradually increase Vofs data until dark cells disappear (Vofs should be 255 (60 [V]) or less).
VOF ***
Note:
This setting value becomes the value for Vofs_min1.
Vofs_min1
[STEP]
Note: Take note of the value for Vofs_min1.
Is Vofs_min1 144 (38 [V]) or smaller?
No
Replace the panel again or abnormality in circuits
Yes
Return the Vofs value to the tentative voltage setting.
VOF ***
Note:
This is for checking the lower limit of Vofs accurately.
(Check Vofs_min2 with the sky color signal.)
Perform aging with RST MASK 01 (white) displayed for 3 seconds:
MKS S51
Set to RST MASK 16 (sky color).
MKS S66
Set VOL OFFSET to 024 (15 [V]).
VOF 024
Are there any dark cells?
No
Set Vofs_min2 to 024 (15 [V]).
Yes
Gradually increase the Vofs data until dark cells disappear (Vofs should be 255 (60 [V]) or less).
VOF ***
Note:
This setting value becomes the value for Vofs_min2.
Vofs_min2
[STEP]
Note: Take note of the value for Vofs_min2.
Is Vofs_min2 144 (38 [V]) or smaller?
No
Replace the panel again or abnormality in circuits
Yes
Return the Vofs value to the tentative voltage setting.
Note:
This is for checking the lower limit of Vofs accurately.
(To ③)

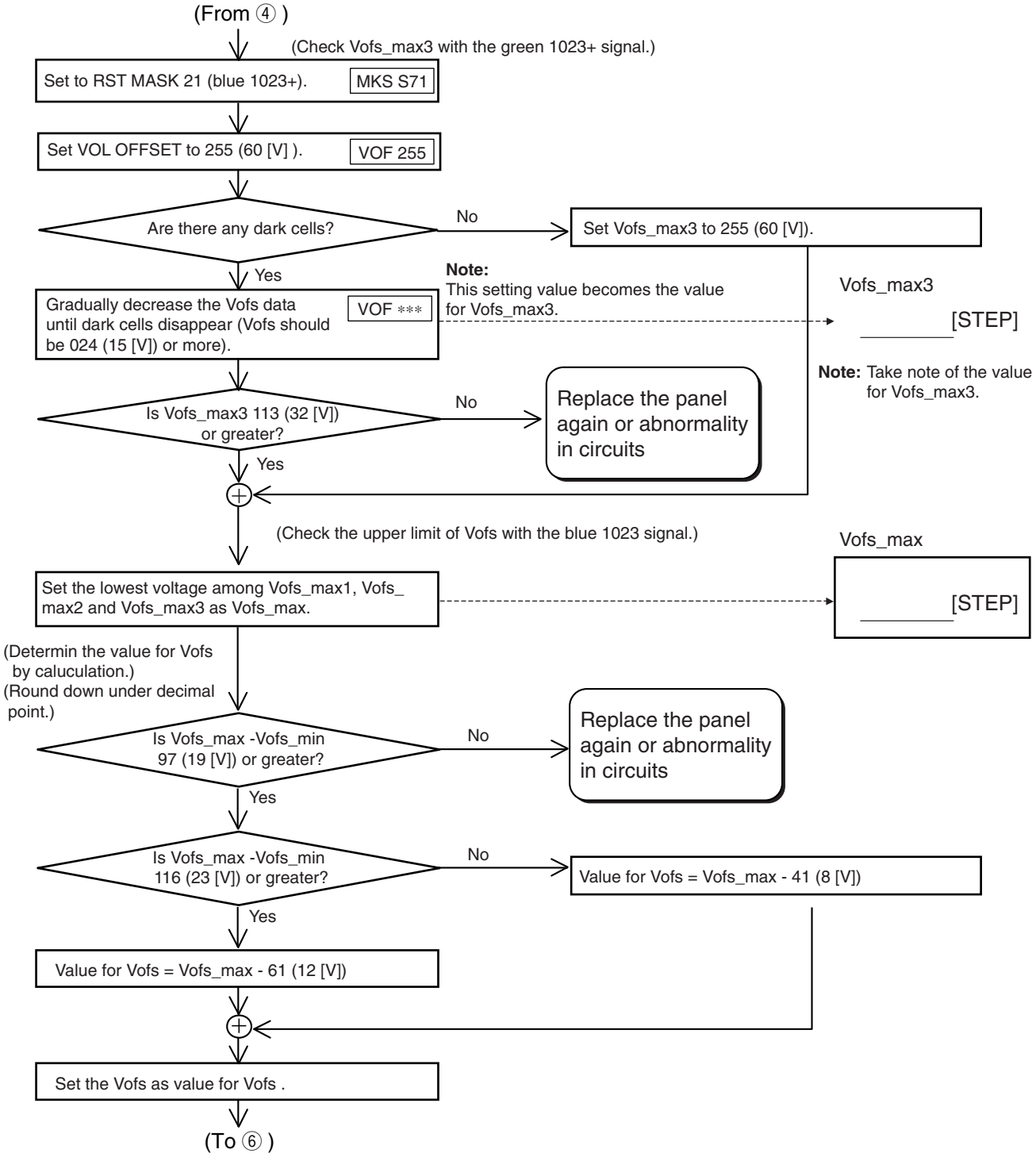
③ Actual Vofs adjustment (2)


(From ②)
(Check Vofs_min3 with the yellow egg color signal.)
Perform aging with RST MASK 01 (white) displayed for 3 seconds:
MKS S51
Set to RST MASK 14 (yellow egg color).
MKS S64
Set VOL OFFSET to 024 (15 [V]).
VOF 024
Are there any dark cells?
No
Set Vofs_min3 to 024 (15 [V]).
Yes
Note:
This setting value becomes the value for Vofs_min3.
Gradually increase Vofs data until dark cells disappear (Vofs should be 255 (60 [V]) or less).
VOF ***
Vofs_min3
[STEP]
Note: Take note of the value for Vofs_min3.
Is Vofs_min3 144 (38 [V]) or smaller?
No
Replace the panel again or abnormality in circuits
Yes
Return the Vofs value to the tentative voltage setting.
VOF ***
Note:
This is for checking the lower limit of Vofs accurately.
Vofs_min
Set the highest voltage among Vofs_min1, Vofs_min2 and Vofs_min3 as Vofs_min.
[STEP]
(To ④)
Note: Take note of the lower limit color of Vofs (pale purple or sky color or yellow egg color).

④ Actual Vofs adjustment (3)


(From ③)
(Check Vofs_max1 with the red 1023+ signal.)
Perform aging with RST MASK 01 (white) displayed for 3 seconds:
MKS S51
Set to RST MASK 19 (red 1023+).
MKS S69
Set VOL OFFSET to 255 (60 [V]).
VOF 255
Are there any dark cells?
No
Set Vofs_max1 to 255 (60 [V]).
Yes
Gradually decrease Vofs data until dark cells disappear (Vofs should be 024 (15 [V]) or more).
VOF ***
Note:
This setting value becomes the value for Vofs_max1.
Vofs_max1
[STEP]
Note: Take note of the value for Vofs_max1.
Is Vofs_max1 113 (32 [V]) or greater?
No
Replace the panel again or abnormality in circuits
Yes
Return the Vofs value to the tentative voltage setting.
VOF ***
Note:
This is for checking the lower limit of Vofs accurately.
(Check Vofs_max2 with the green 1023+ signal.)
Perform aging with RST MASK 01 (white) displayed for 3 seconds:
MKS S51
Set to RST MASK 20 (green1023+).
MKS S70
Set VOL OFFSET to 255 (60 [V]).
VOF 255
Are there any dark cells?
No
Set Vofs_max2 to 255 (60 [V]).
Yes
Gradually decrease the Vofs data until dark cells disappear (Vofs should be 024 (15 [V]) or more).
VOF ***
Note:
This setting value becomes the value for Vofs_max2.
Vofs_max2
[STEP]
Note: Take note of the value for Vofs_max2.
Is Vofs_max2 113 (32 [V]) or greater?
No
Replace the panel again or abnormality in circuits
Yes
Return the Vofs value to the tentative voltage setting.
Note:
This is for checking the lower limit of Vofs accurately.
(To ⑤)

⑤ Actual Vofs adjustment (4)

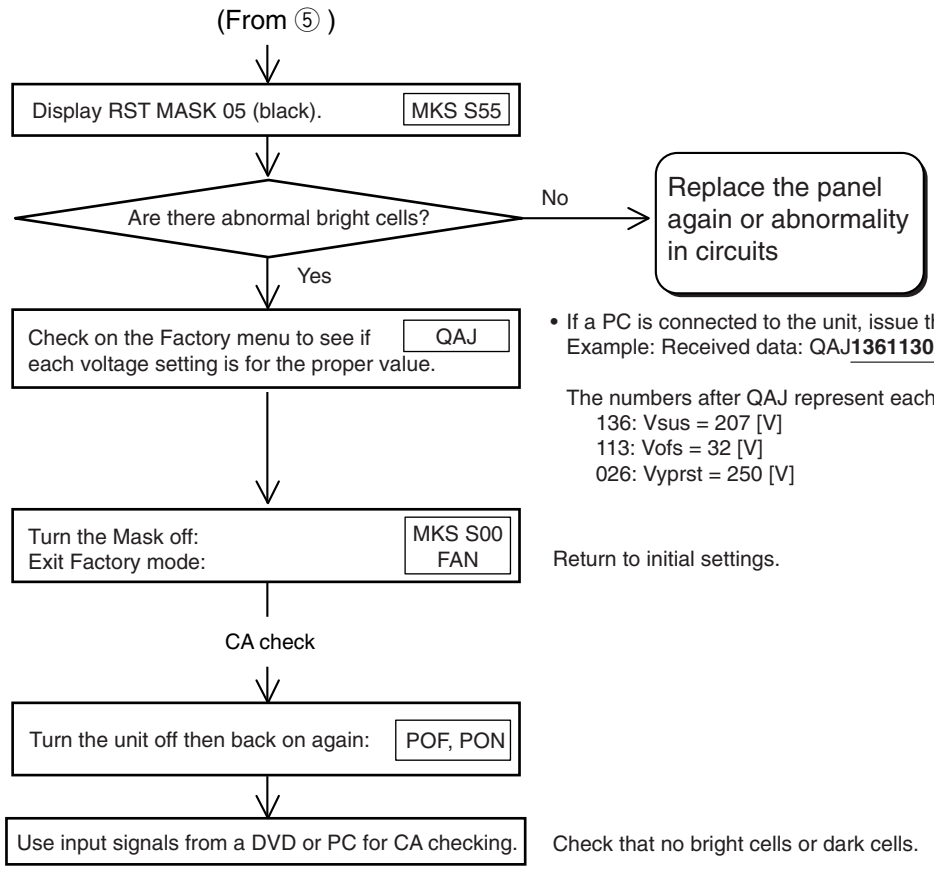

(From ④)
(Check Vofs_max3 with the green 1023+ signal.)
Set to RST MASK 21 (blue 1023+).
MKS S71
Set VOL OFFSET to 255 (60 [V]).
VOF 255
Are there any dark cells?
No
Set Vofs_max3 to 255 (60 [V]).
Yes
Note:
This setting value becomes the value for Vofs_max3.
Vofs_max3
[STEP]
Gradually decrease the Vofs data until dark cells disappear (Vofs should be 024 (15 [V]) or more).
VOF ***
Note: Take note of the value for Vofs_max3.
Is Vofs_max3 113 (32 [V]) or greater?
No
Replace the panel again or abnormality in circuits
Yes
(Check the upper limit of Vofs with the blue 1023 signal.)
Vofs_max
Set the lowest voltage among Vofs_max1, Vofs_ max2 and Vofs_max3 as Vofs_max.
[STEP]
(Determin the value for Vofs by caluculation.)
(Round down under decimal point.)
Is Vofs_max -Vofs_min 97 (19 [V]) or greater?
No
Replace the panel again or abnormality in circuits
Yes
Is Vofs_max -Vofs_min 116 (23 [V]) or greater?
No
Value for Vofs = Vofs_max - 41 (8 [V])
Yes
Value for Vofs = Vofs_max - 61 (12 [V])
Set the Vofs as value for Vofs .
(To ⑥)

* Vofs= _____ [V] determined

Vofs margin = Vofs_max - Vofs_min

* Vofs Margin = _____ [V]

⑥ CA CHECK


(From ⑤)
Display RST MASK 05 (black).
MKS S55
Are there abnormal bright cells?
No
Replace the panel again or abnormality in circuits
Yes
Check on the Factory menu to see if each voltage setting is for the proper value.
QAJ
Turn the Mask off:
Exit Factory mode:
MKS S00
FAN
CA check
Turn the unit off then back on again:
POF, PON
Use input signals from a DVD or PC for CA checking.

- If a PC is connected to the unit, issue the QAJ command to check each voltage.
  Example: Received data: QAJ**136113026*****12812812812812833OF7

  The numbers after QAJ represent each voltage after adjustment, as follows:
  136: Vsus = 207 [V]
  113: Vofs = 32 [V]
  026: Vyprst = 250 [V]

Return to initial settings.

Check that no bright cells or dark cells.

■ Conversion charts for electronic VRs (Vprst/Vofs)

Vprst [V]	Setting value [STEP]
250	026
251	028
252	031
253	033
254	036
255	038
256	041
257	043
258	046
259	048
260	051
261	054
262	056
263	059
264	061
265	064
266	066
267	069
268	071
269	074
270	077
271	079
272	082
273	084
274	087
275	089
276	092
277	094
278	097
279	099
280	102
281	105
282	107
283	110
284	112
285	115
286	117
287	120
288	122
289	125
290	128
291	130
292	133
293	135
294	138
295	140
296	143
297	145
298	148
299	150
300	153

Vofs [V]	Setting value [STEP]
15	024
16	029
17	034
18	039
19	045
20	050
21	056
22	061
23	066
24	071
25	076
26	082
27	087
28	092
29	097
30	102
31	108
32	113
33	118
34	123
35	128
36	133
37	139
38	144
39	149
40	154
41	158
42	163
43	168
44	173
45	178
46	184
47	189
48	194
49	199
50	204
51	209
52	215
53	220
54	225
55	230
56	235
57	241
58	246
59	251
60	255

7.6 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED

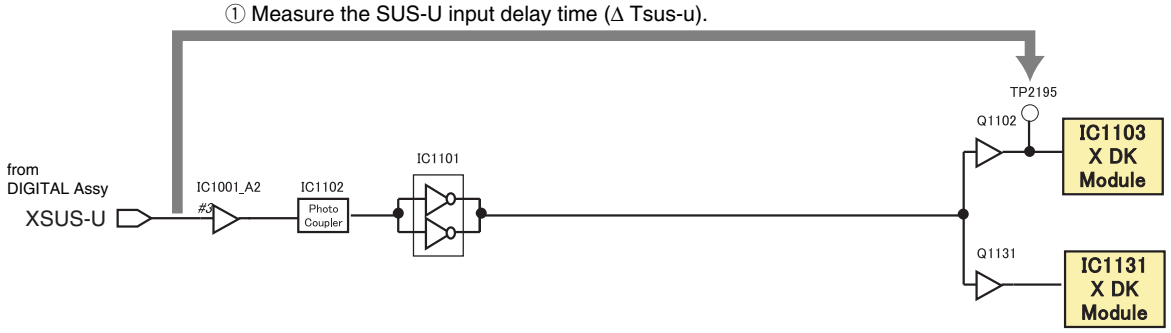
■ 60 X DRIVE Assy

Object parts

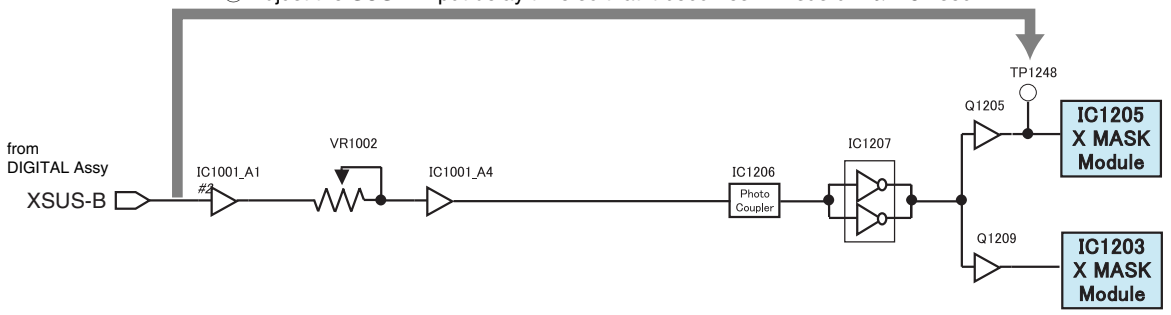
Ref. No.	Part Category	Part No.
IC1206	Photo Coupler	PS9117-TLB
IC1207	FET Driver	TND307TD-TBB
IC1210	FET Driver	TND307TD-TBB

SUS-B ADJUSTMENT

① Measure the SUS-U input delay time (Δ Tsus-u).

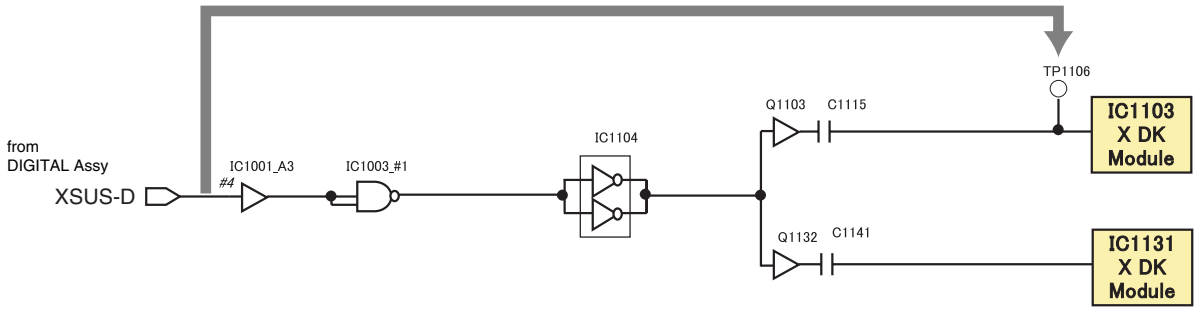


② Adjust the SUS-B input delay time so that it becomes "Δ Tsus-u + α ± 5 nsec."

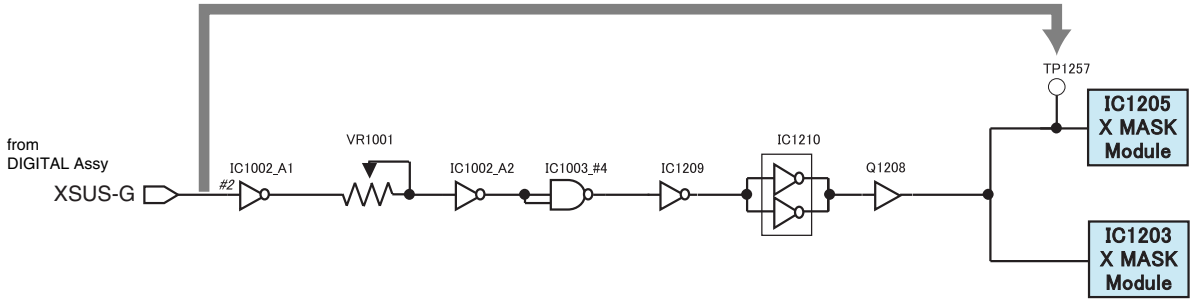


SUS-G ADJUSTMENT

① Measure the SUS-D input delay time (Δ Tsus-d).



② Adjust the SUS-G input delay time so that it becomes "Δ Tsus-d + β ± 5 nsec."



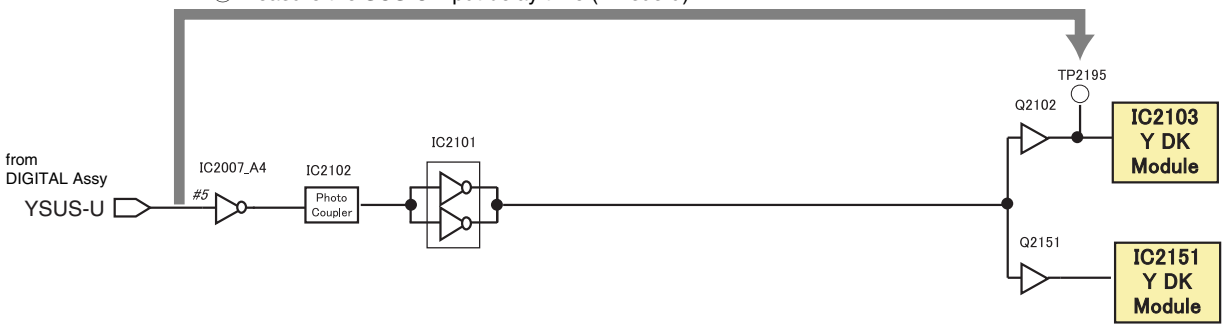
60 Y DRIVE Assy

Object parts

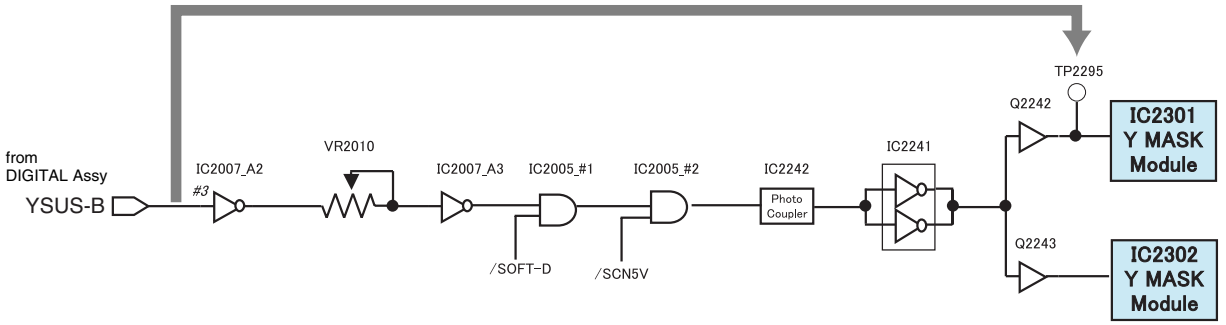
Ref. No.	Part Category	Part No.
IC2242	Photo Coupler	PS9117-TLB
IC2241	FET Driver	TND307TD-TBB
IC2252	FET Driver	TND307TD-TBB

SUS-B ADJUSTMENT

① Measure the SUS-U input delay time (Δ Tsus-u).

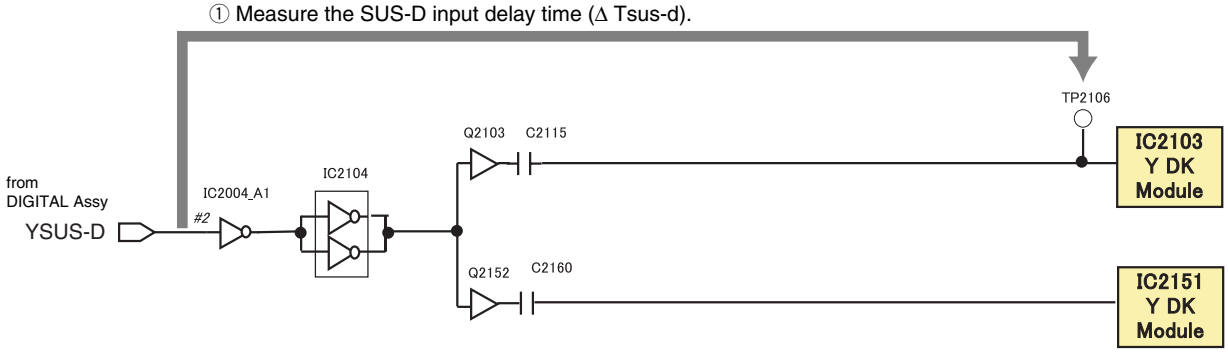


② Adjust the SUS-B input delay time so that it becomes "Δ Tsus-u + α ± 5 nsec."

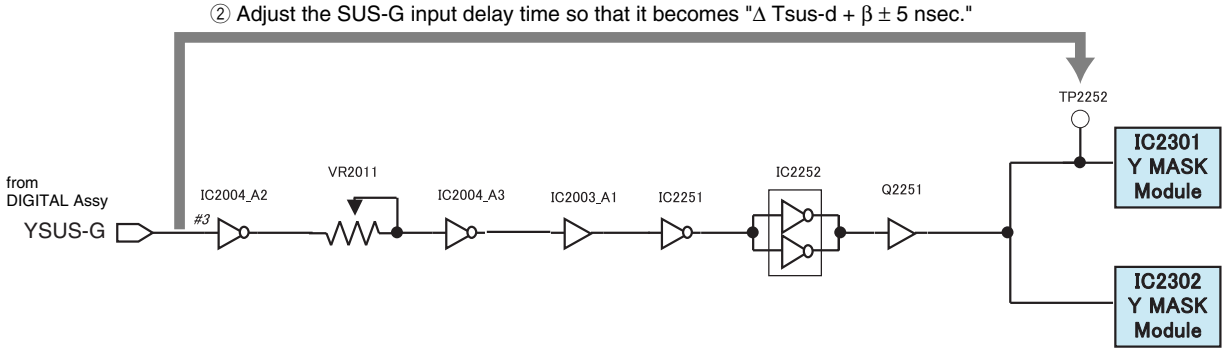


SUS-G ADJUSTMENT

① Measure the SUS-D input delay time (Δ Tsus-d).



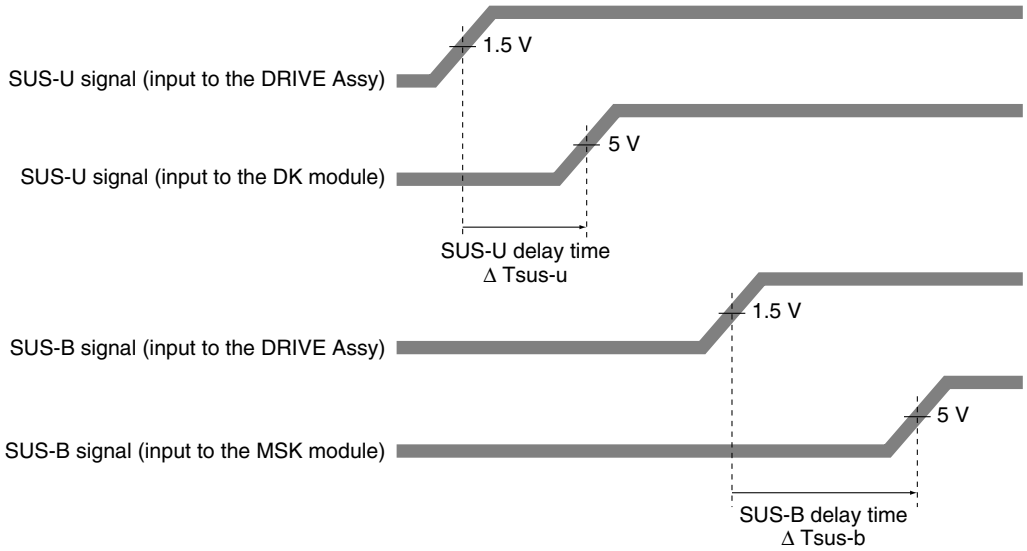
② Adjust the SUS-G input delay time so that it becomes "Δ Tsus-d + β ± 5 nsec."



DELAY ADJUSTMENT OF THE CONTROL SIGNAL (SUS-B)

① Measure the delay time for the SUS-U signal.
② Check the delay time for the SUS-B signal.
Adjust the variable control so that the SUS-B delay time becomes "SUS-U delay time + α ± 5 nsec."

Note: For details on measuring points of waveform, see the figure below.



SUS-B delay time: Δ Tsus-b
Adjust so that "Δ Tsus-b = Δ Tsus-u + α ± 5 nsec," using the variable controls shown in the table below:

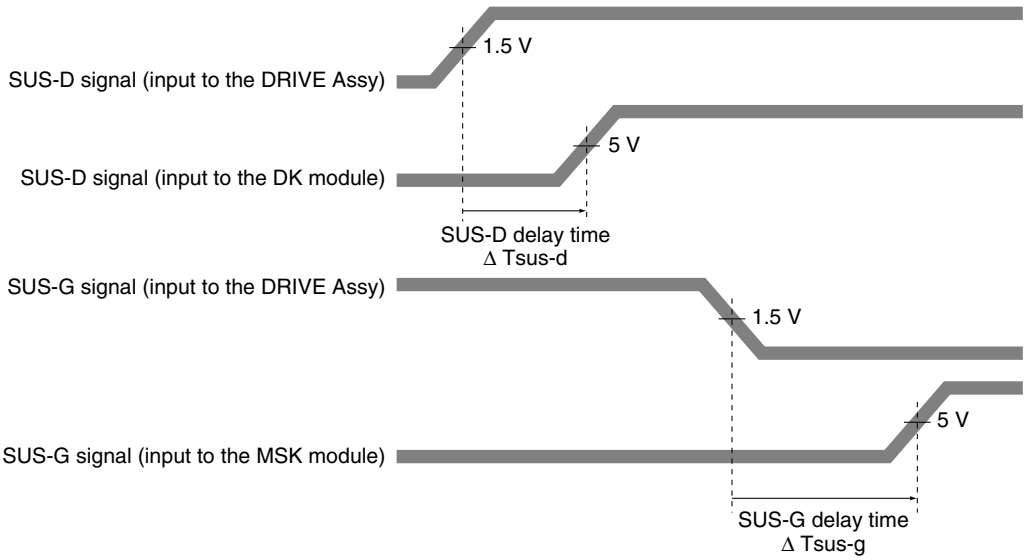
Value of α

Assy	VR	Time
X DRIVE	VR1002	70 nsec
Y DRIVE	VR2010	85 nsec

DELAY ADJUSTMENT OF THE CONTROL SIGNAL (SUS-G)

① Measure the delay time for the SUS-D signal.
② Check the delay time for the SUS-G signal.
Adjust the variable control so that the SUS-G delay time becomes "SUS-D delay time + β ± 5 nsec."

Note: For details on measuring points of waveform, see the figure below.



SUS-G delay time: Δ Tsus-g
Adjust so that "Δ Tsus-g = Δ Tsus-d + β ± 5 nsec," using the variable controls shown in the table below:

Value of β

Assy	VR	Time
X DRIVE	VR1001	120 nsec
Y DRIVE	VR2011	100 nsec

7.7 HOW TO CLEAR HISTORY DATA

■ Clearance of various logs after the Assys are replaced

Besides adjustment data, data on accumulated power-on time and logs on defective parts of the product are backed up. Some of those data must be cleared after the Assys are replaced for service.

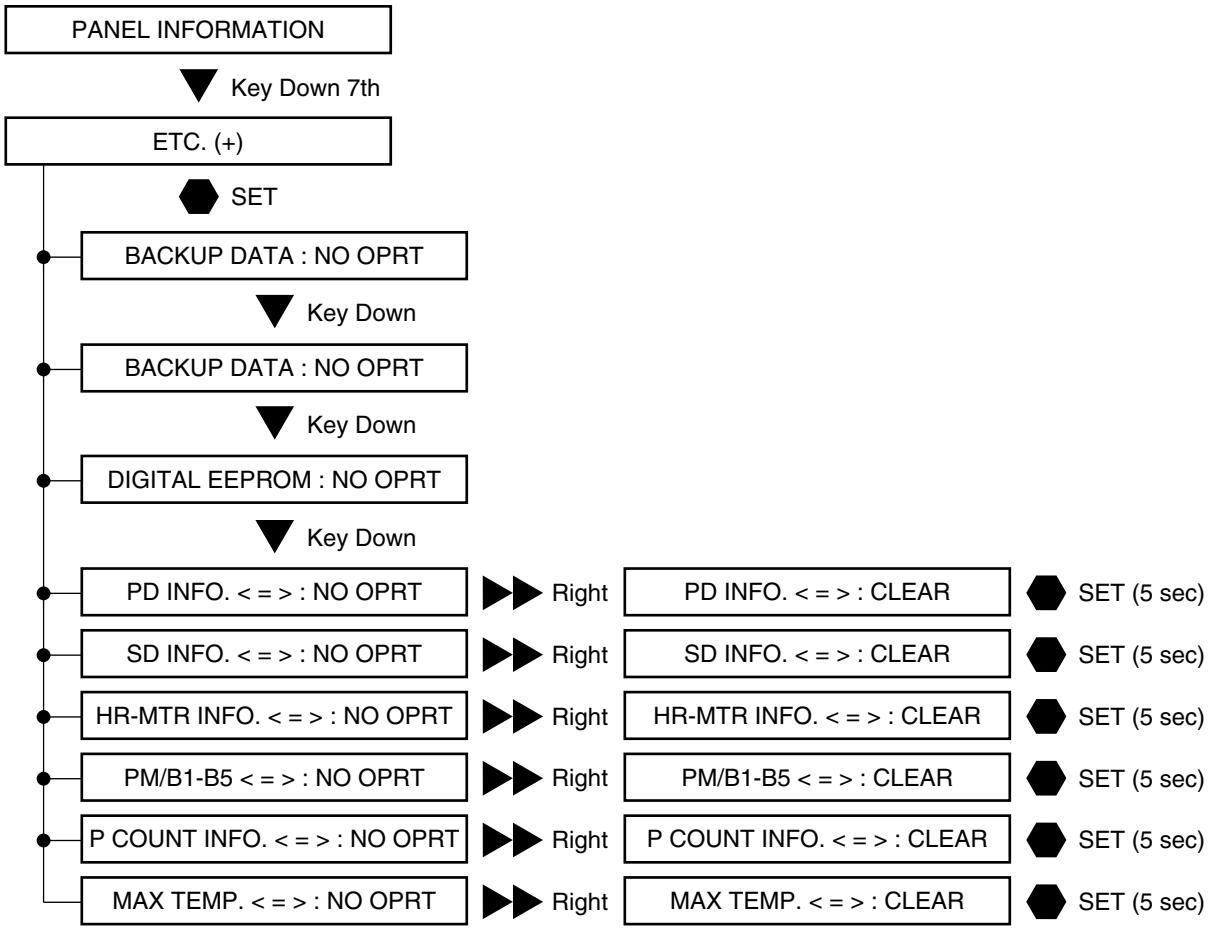
(1) Clearance of logs, using the RS-232C commands

Item	Content	When the Panel is replaced	When the POWER SUPPLY Unit is replaced	When the Other parts is replaced	RS-232C Commands
Hour-meter	Accumulated power-on time	Must be cleared	No need to be cleared	No need to be cleared	CHM
Pulse-meter	Accumulated number of pulses emitted	Must be cleared (mandatory)	No need to be cleared	No need to be cleared	CPM
Shutdown history	Cause of an SD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CSD
Power-down history	Cause of an PD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CPD
Power-on counter	Relay-on count	No need to be cleared	Must be cleared (mandatory)	No need to be cleared	CPC
MAX TEMP	Historical max. temperature	Must be cleared	Must be cleared	Must be cleared	CMT

Notes: • As the pulse-meter count is used for each correction function, it must be cleared when an Assy relevant to correction functions is replaced.
• When clearing logs, using the RS-232C commands, first enter Factory mode (by issuing FAY or PFY), then issue the corresponding command.

(2) Clearance of logs, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Delete various logs, as shown in the figure below.



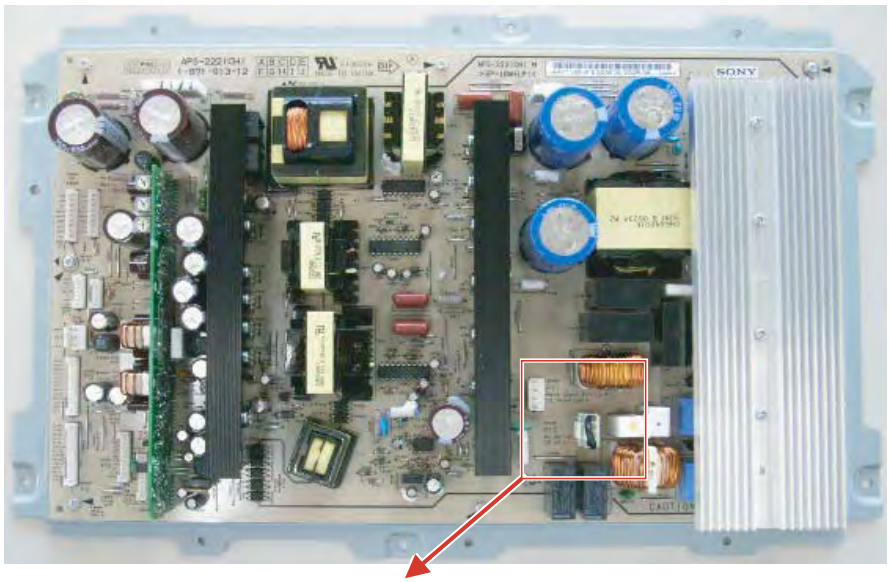
③ Turn the power off.

7.8 PROCEDURE WHEN REPLACING THE POWER SUPPLY UNIT

u

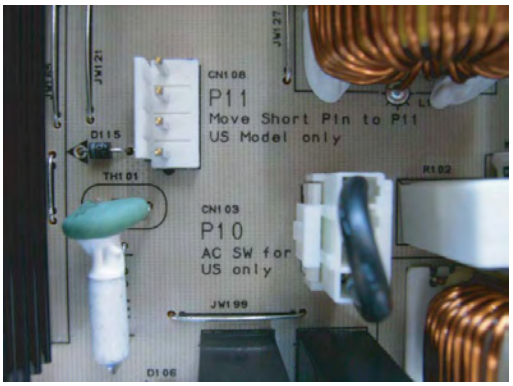
■ Procedure of Changing Jumper Connector after replacing the Power Supply Unit

When replacing the Power Supply Unit, it is necessary to perform the following connector changes.
Otherwise the unit cannot work properly and the unit may be damaged.
Therefore perform these connector settings without fail when replacing the Power Supply Unit. (before power on the unit)

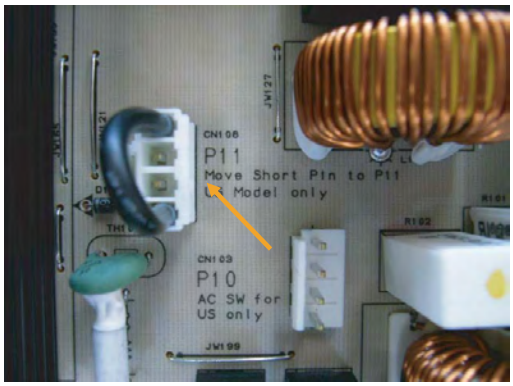


Location of the jumper connector

1. As for service parts, the Jumper connector is connected at connector P10.



2. Remove the jumper connector from connector P10 and connect it to connector P11.



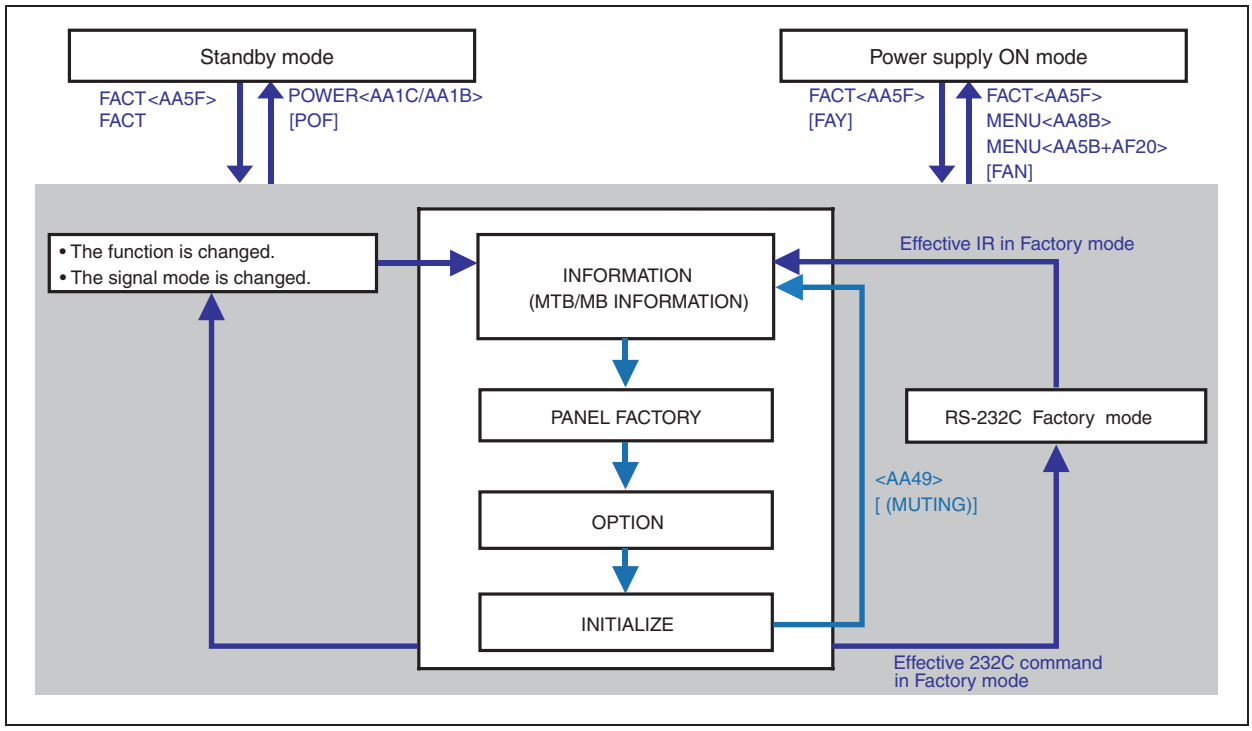
3. Connect the cable connector from power SW to P10.

8. SERVICE FACTORY MODE

8.1 SERVICE FACTORY MODE OUTLINE

Operations during Service/Factory mode are described here.

8.1.1 TRANSITION DIAGRAM OF SERVICE FACTORY MODE



8.1.2 HOW TO ENTER/EXIT SERVICE FACTORY MODE

■ How to enter Service Factory Mode and do it go out.

■ How to enter Service Factory Mode.

Case operated by remote control)

- Service remote control : press[FACTORY1]key.

Case to RS-232C transmit command)

- Standby mode : Send [PON]+[FAY] .
- Power supply ON mode : Send[FAY] .

■ How to come off Service Factory Mode.

Case operated by remote control)

- Service remote control : press [FACTORY1] key.
- Remote control : press [HOME MENU] key.

Case to RS-232C transmit command)

- Send [FAN] .

8.1.3 OPERATION OF SERVICE FACTORY MODE

■ Functions whose setting are set to OFF.

The settings for the following functions are set to OFF when Service Factory mode is entered (Including when the "FAY" command is received) :

No.	Function	Remarks
1	Two screen operation	Input function set on the main side is selected.
2	FREEZE	
3	Mask control	MTB/MB is none. It becomes processing on the PANEL side.
4	ORBITER	Central value operation.
5	Detection of the TRAP switch	The detection operation is stopped.
6	TRAP history	To a possible turning on though the memory is maintained.
7	Display of TV guide	
8	Setting of Parental Control	When this is turned off, the block of the screen is released.

Note) Enter the factory after canceling ACI because the ACI operation setting OFF and not done.

■ User data

User data will be treated as follows :

- User data on picture- and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- As to data on various settings, user data will be applied to the items that are associated with signal format change (screenize switching, etc).
- Data on screen (i.e.,screen position; meaning clock dividers, and not including data on screen size) Are reset to the default values (data stored in memory will be retained). Screen size will be retained.

8.1.4 REMOTE CONTROL CODE

■ Remote control codes in Service Factory mode.

SR/R Keys	Basic Functions	Remarks
Muting	Switching the main items	Shifting to the next main item (top).
↓(DOWN)	Switching the subtitled items.	Shifting downward to the next subtitiled item.
↑(UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
←(LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→(RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1-6 etc)
CH+/P+	Increasing the channel number.	Advanving.
CH-/P-	Decreasing the channel number.	
Numeric keys	Function: TV	Function: TV(previously selected channel number is selected).
POWER	Power OFF	Turning the power off.
FACTORY	Factory OFF(Factory mode) Factory ON(Non-Factory mode)	In Factory mode , turning Factory mode off. In Non-Factory mode , turning Factory mode on.
HOME MENU *1	Menu ON.	In Factory mode , turning Factory mode off, and Menu mode on.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Increasing 10 the adjustment value. (PANEL FACTORY)
DRIVE ON/OFF *2	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR *1	INTEGRATOR MENU ON	Enter INTEGRATOR MODE.

[Note] *1 : A pertinent key that exists in the service remote control, becomes effective only in the factory and integrator mode.
Please use the remote control of the attachment when you normally operate it in the mode (home menu operation, etc.).
*2 : When ten seconds have passed since the [DRIVE ON/OFF] key was pressed at the standby, it becomes invalid.
Please press [POWER] key from the [DRIVE ON/OFF] key pressing within ten seconds when you do power supply ON while driven OFF.

Remote Control Unit
for Servicing

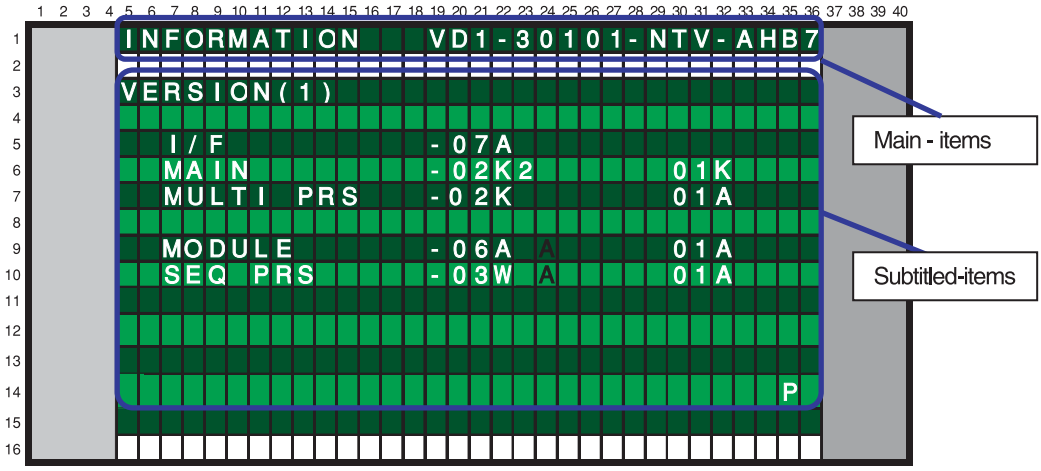
8.1.5 CONFIGURATION OF FACTORY MODE

■ Configulation of G7 Factory mode

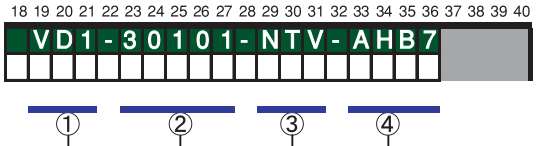
Main item / Submode Name	Submode item	Adjustable Range	Remarks
8.2.1 INFOMATION			
8.2.1.1 VERSION (1)			
8.2.1.2 VERSION (2)			
8.2.1.3 VERSION (3)			
8.2.1.4 MAIN NG	CLEAR <=>	NO<=>YES	
8.2.1.5 TEMPERATURE			
8.2.1.6 HOUR METER	MTB HOUR METER	NO<=>YES	
8.2.1.7 HDMI SIGNAL INFO 1			
8.2.1.8 HDMI SIGNAL INFO 2			
8.2.1.9 VDEC SIGNAL INFO			
8.2.1.10 DTV TUNING STATUS1			
8.2.1.11 DTV TUNING STATUS2			
8.2.1.12 DTV TUNING STATUS3			
8.2.1.13 DTV TV-GUIDE BER			for technical analysis
8.2.1.14 DEBUG INFO			for technical analysis
8.2.2 PANEL FACTORY (+)			
8.2.2.1 PANEL INFORMATION			
8.2.2.2 PANEL WORKS			
8.2.2.3 POWER DOWN			
8.2.2.4 SHUT DOWN			
8.2.2.5 PANEL-1 ADJ (+)			
	X-SUS B ⇔	120 to 136	
	Y-SUS B ⇔	120 to 136	Equivalent to YSB
	Y-SUSTAIL T1 ⇔	120 to 136	Equivalent to YTG
	Y-SUSTAIL T2 ⇔	120 to 136	Equivalent to YTB
	Y-SUSTAIL W ⇔	120 to 136	Equivalent to YTW
	XY-RST W1 ⇔	120 to 136	Equivalent to RSW
	XY-RST W2 ⇔	120 to 136	Equivalent to RYW
	VOL SUS ⇔	000 to 255	Equivalent to VSU
	VOL OFFSET ⇔	000 to 255	Equivalent to VOF
	VOL RST P ⇔	000 to 255	Equivalent to VRP
	SUS FREQ. ⇔	MODE1-MODE8	Equivalent to SFR
8.2.2.6 PANEL-2 ADJ (+)			
	R-HIGH ⇔	000 to 511	Equivalent to PRH
	G-HIGH ⇔	000 to 511	Equivalent to PGH
	B-HIGH ⇔	000 to 511	Equivalent to PBH
	R-LOW ⇔	000 to 999	Equivalent to PRL
	G-LOW ⇔	000 to 999	Equivalent to PGL
	B-LOW ⇔	000 to 999	Equivalent to PBL
	ABL ⇔	000 to 255	Equivalent to ABL
8.2.2.7 PANEL REVISE (+)			
	R-LEVEL ⇔	LV-0 to LV-7	Equivalent to RRL
	G-LEVEL ⇔	LV-0 to LV-7	Equivalent to RGL
	B-LEVEL ⇔	LV-0 to LV-7	Equivalent to RBL
8.2.2.8 ETC (+)			
	BACKUP DATA ⇔	NO OPRT ⇔ TRANSFER or ERR	Equivalent to BCP
	DIGITAL EEPROM ⇔	NO OPRT ⇔ DELETE/REPAIR	Equivalent to FAJ/UAJ
	PD INFO. <=>	NO OPRT ⇔ CLEAR	Equivalent to CPD
	SD INFO. <=>	NO OPRT ⇔ CLEAR	Equivalent to CSD
	HR-MTR INFO. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CHM
	PM/B1-B5 <=>	NO OPRT ⇔ CLEAR	Equivalent to CPM
	P COUNT INFO. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CPC
	MAX TEMP. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CMT
8.2.2.9 RASTER MASK SETUP (+)			
	MASK OFF		Equivalent to MKS+S00
	RST MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKS+S51
	•••	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	•••
	RST MASK 24 ⇔		Equivalent to MKS+S74
8.2.2.10 PATTEN MASK SETUP (+)			
	MASK OFF		Equivalent to MKS+S00
	PTN MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKS+S01
	•••	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	•••
	PTN MASK 39 ⇔		Equivalent to MKS+S39
8.2.2.11 COMBI MASK SETUP (+)			
	MASK OFF		Equivalent to MKC+S00
	CMB MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKC+S01
	CMB MASK 10 ⇔	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	•••
			Equivalent to MKC+S10
8.2.3 OPTION			
8.2.3.1 EDID WRITE MODE ⇔		OFF ⇔ ON	for production line
8.2.3.2 ANTENNA MODE ⇔		CABLE ⇔ AIR	for production line
8.2.3.3 AFT ⇔		OFF ⇔ ON	for production line
8.2.4 INITIALIZE			
8.2.4.1 SYNC DET (+)			for technical analysis
8.2.4.2 SG MODE ⇔		SG OFF⇔ •••	
8.2.4.3 SG PATTERN ⇔		SG PATTERN⇔COLORBAR1 •••	
8.2.4.4 SIDE MASK LEVEL (+)			
	R MASK LEVEL ⇔	000 to 255	
	G MASK LEVEL ⇔	000 to 255	
	B MASK LEVEL ⇔	000 to 255	
8.2.4.5 FINAL SETUP (+)	DATA RESET ⇔	OFF ⇔ ON	
8.2.4.6 HMG/HG SERVICE MODE	MODE SHIFT ⇔	OFF ⇔ ON	
8.2.4.7 CVT AUTO ⇔			for technical analysis
8.2.4.8 HDMI INTR POSITION (+)	INTR-POS1(0x75) ⇔	000 to 255	for technical analysis
	INTR-POS2(0x76) ⇔	000 to 255	for technical analysis
	INTR-POS3(0x77) ⇔	000 to 255	for technical analysis
	INTR-POS4(0x78) ⇔	000 to 255	for technical analysis

8.1.6 INDICATION (OSD) OF SERVICE FACTORY MODE

■ Indications in Service Factory mode



■ Main-item indications



①	Input function
②	SIG mode and Screen size
③	Color system and Signal type
④	Option

Input function	
Input function	OSD
VIDEO1-6	VD1-6
Terrestrial Wave A	ARA
Terrestrial Wave B	ARB
Cable A	CBA
Cable B	CBB
Home Gallery (Regular)	HG
Home Media Gallery (ELITE)	HMG
PC	PC

SIG mode and Screen size
Note: See SIG-Mode Tables.(See next page.)

Color system and Signal type		
Color system and signal type		OSD
NTSC	Composite input	NTV
	S-connector input	NTS
Y/CB/CR		CBR
Y/PB/PR		PBR
RGB		RGB
Digital video signal		DIG

Option(Destination, Panel Generation, etc)	
Options	OSD
SX System in North America(Regular)	ATB7
SX system in North America(ELITE)	AHB7

②SIG Mode and Screen Size (by User is displayed)

1-2nd Character: SIG-Mode (resolution)

3-4th Character: SIG-Mode (refresh rate)

5th Character: Setting of the screen size that user configured

■SIG-Mode table for video signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
10	60	SDTV*525i	60.000	15.750
20	60	SDTV*525p	60.000	31.500
30	60	HDTV*1125i	60.000	33.750
40	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000

■SIG-Mode table for PC signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
C1	70	720x400	70.087	31.469
C2	60	640x480	59.940	31.469
	72		72.809	37.861
	75		75.000	37.500
C4	56	800x600	56.250	35.1556
	60		60.317	37.879
	72		72.188	48.077
	75		75.000	46.875
C7	60	1024x768	60.004	48.363
	70		70.069	56.476
	75		75.029	60.023
C9	60	1360x768	60.015	47.712

■Selection of the screen size by the user is displayed.

5th Character	GUI Notation	VIDEO	PC	Remark
0	DOT BY DOT	×	●	
1	4:3	●	●	
2	FULL (FULL1)	●	●	
3	ZOOM	●	×	
4	CINEMA	●	×	
5	WIDE	●	×	
8	FULL2	●	●	

●: supported, ×: unsupported

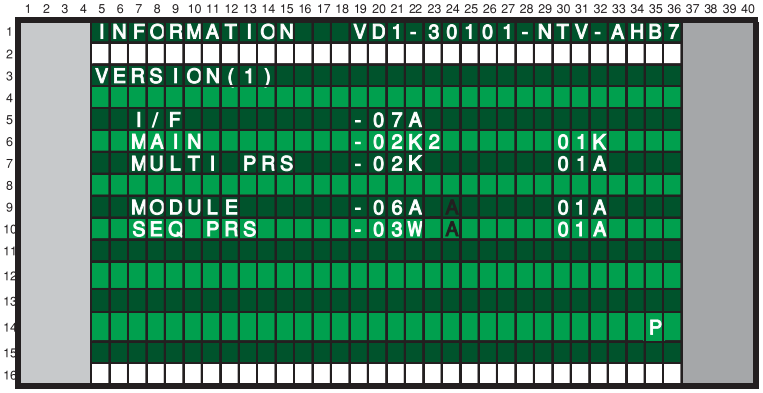
8.2 FACTORY MENU

8.2.1 INFORMATION

■**Operation items**

No.	Function/Display	Context	RS232C
1	VERSION(1)	The Flash memory versions for each device are displayed. (Common Part)	QS1
2	VERSION(2)	The Flash memory versions for each device are displayed. (Individual Part)	QS6
3	VERSION(3)		QS6
4	MAIN NG	The Shutdown Message ID/Event Times in Main Microcomputer are displayed.	QNG
5	TEMPERATURE	The Temperature/FAN rotating status are displayed.	QMT
6	HOUR METER	The HOUR METER/P-COUNT information are displayed.	QIP
7	HDMI SIGNAL INFO 1	The Information of HDMI information files are displayed.	-
8	HDMI SIGNAL INFO 2		-
9	VDEC SIGNAL INFO	Display the Signal Information on VDEC.	-
10	DTV TUNING STATUS 1	Digital broadcast information and status is displayed upon receiving digital broadcast signal.	-
11	DTV TUNING STATUS 2		-
12	DTV TUNING STATUS 3		-
13	DTV TV-GUIDE BER	TV-Guide Bit Error Rate Information	-
14	DEBUG INFO	Debug Information.	-

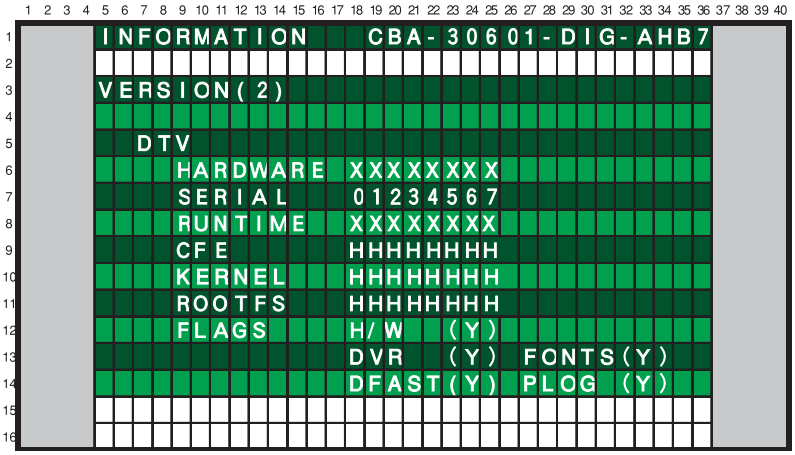
8.2.1.1 Version(1)



Flash Device	Item Name	Ex.		Elite	Regular
		Executed program part	BOOT part		
IF microcomputer	I/F	-07A	–	○	○
MAIN microcomputer	MAIN	-02K2	01K	○	○
Multi processor	MULTI PRS	-02K2	01A	○	○
MODULE microcomputer	MODULE	-06A_A	01A	○	○
Sequence processor	SEQ PRS	-03W_A	01A	○	○

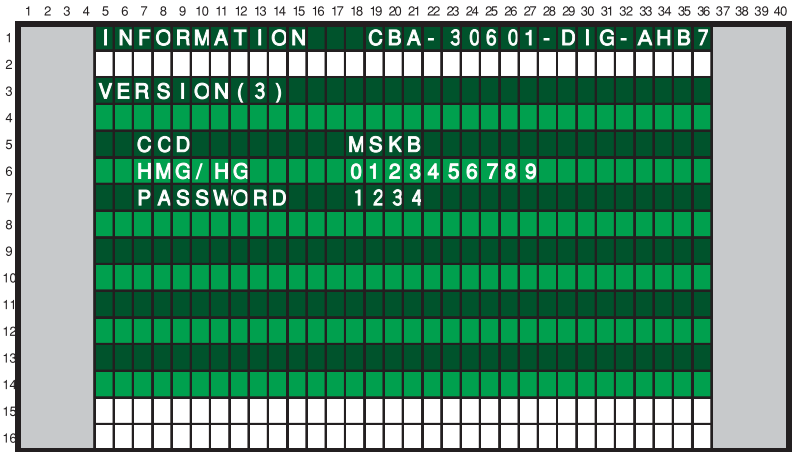
In the 29-32 rows, ROM version information on each device is displayed.
In the 19-24 rows, Version information on a common treatment is displayed.
At the position "14x35", The Past/Highly effective panel distinction information is displayed.
" P " : The past panel, "F" : The highly effective panel

8.2.1.2 VERSION(2)



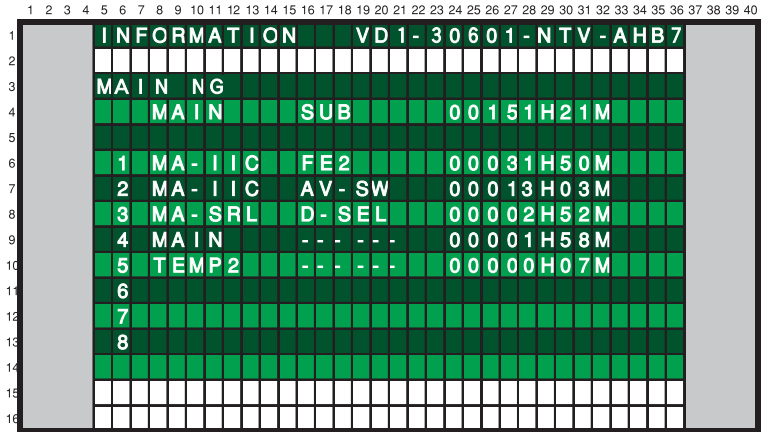
Flash Device	Item Name	Ex.	Elite	Regular
DTVHardware Version	HARDWARE	XXXXXXXX	O	O
DTV Hardware Serial	SERIAL	1234567	O	O
DTV Runtime Version	RUNTIME	XXXXXXXX	O	O
CFE Version	CFE	HHHHHHHH	O	O
KERNEL Version	KERNEL	HHHHHHHH	O	O
ROOTFS Version	ROOTFS	HHHHHHHH	O	O
FLAGS	FLAGS	H/W (Y)	O	O
		DVR (Y) FONTS(Y)	O	O
		DFTS (Y) PLOG (Y)	O	O

8.2.1.3 VERSION(3)



Flash Device	Item Name	Ex.	Elite	Regular
CCD-UCOM Version	CCD	MSKB	O	O
HMG/HG module Version	HMG/HG	0123456789	O	O
User Password	PASSWORD	1234	O	O

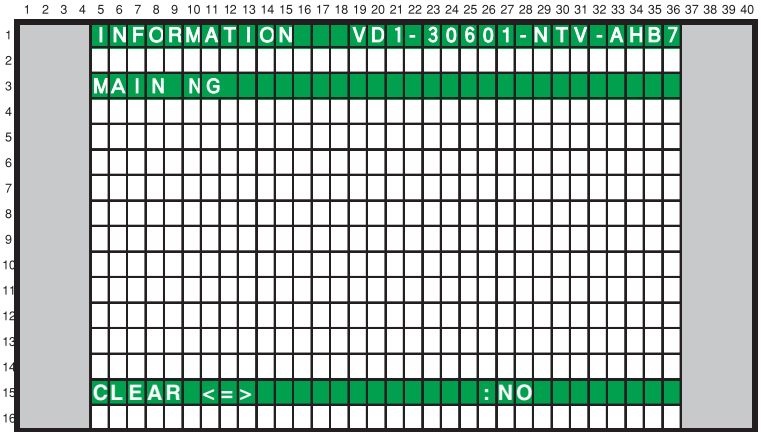
8.2.1.4 MAIN NG



■MTB side's Shutdown NG information

OSD:MAIN	OSD:SUB	Cause of shutdown
AUDIO	----	Shortcircuit of Speaker terminal
MODULE	----	Failure of communication to Module microcomputer
MA-SRL		3-wire Serial Communication of Main microcomputer
	IF	- Communication failure of IF microcomputer
	MULTI1	- MANTA communication failure (MULIT1)
	I/P	- MANTA communication failure (I/P)
	D-SEL	- MANTA communication failure (D-SEL)
MA-IIC		IIC Communication failure of Main microcomputer
	FE1	- Analog Tuner 1 (Front End 1)
	FE2	- Analog Tuner 2 (Front End 2)
	MPX	- MPX
	AUDIO	- Volume IC
	AV-SW	- AV Switch
	RGB-SW	- RGB Switch
	M-VDEC	- Main VDEC
	ADC	- AD/PLL
	HDMI	- HDMI
	MA-EEP	- 64k EEPROM
	CCD	- CCD
MAIN		Communication failure of Main microcomputer &Unknown Error
FAN		Fan stopped
TEMP2		Abnormally high temperature
DTUNER		Failure of Digital Tuner
	PS/RST	- Failure to DTB Starting
	DEVICE	- DTB Device Error
	TV-G	- TV-Guide Error
	HOME-G	- Failure at Home Gallary
MA-PWR	M-DCDC	-Abnormally in RST2 of MAIN Assy (power decrease of DC-DC converter)
	RELAY	-Abnormally in RST4 of MAIN Assy (power decrease of Relay power)
HMG		Failure at Home Media Gallary
	START	-

4.MAIN NG (Continued)

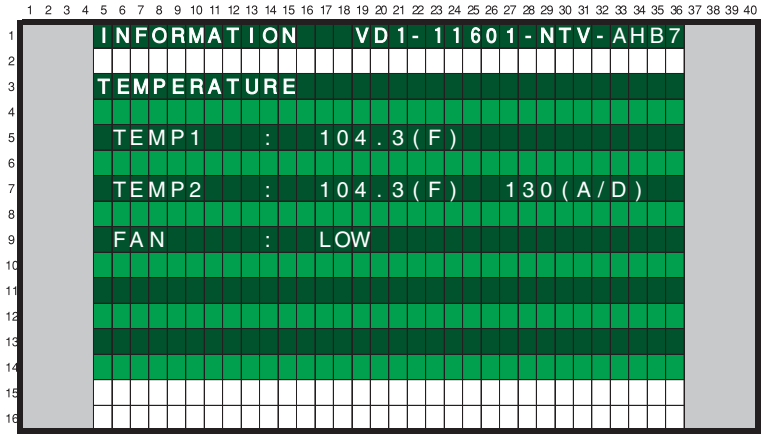


■ **CLEAR Operation**

Even if [←] key or [→] key is pushed, "CLEAR ⇔ YES" ⇔ "CLEAR ⇔ NO" is repeated. If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

8.2.1.5 TEMPERATURE

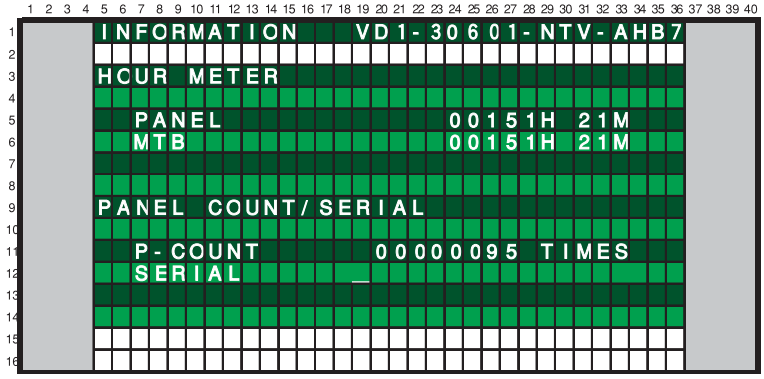
A present temperature and the FAN rotation are displayed.
If either [←] key or [→] key is pressed, the display data is refreshed.



■ Display/Meaning

TEMP1 : The temperature of the sensor on the panel side is displayed by Fahrenheit (F).
TEMP2 : The temperature conversion display is done with 10bit the A/D input value of Main uCON 76PIN(AN0). It is displayed by both Fahrenheit (F) and 8bit A/D value. (Remark:When temperature (C) of the sensor becomes more than a specified temperature, the shutdown start of processing.)
FAN : The value of the Fan rotating state is displayed.
STOP:stopped, LOW:slow speed, HIGH:high speed.

8.2.1.6 HOUR METER



■ Operation:

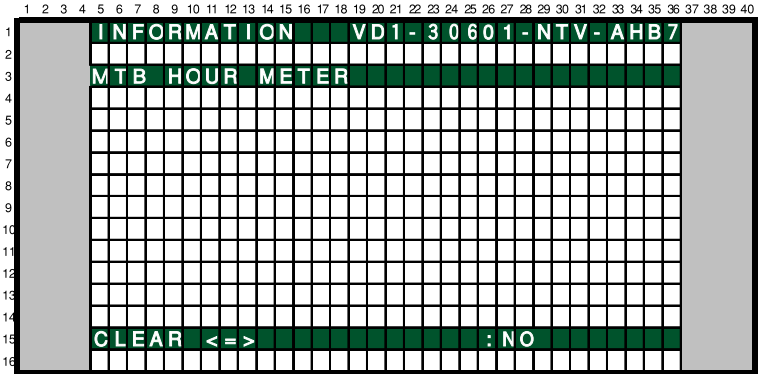
In HOUR METER screen on Factory Menu, press the [ENTER] key, and then it moves to the screen to clear MTB HOUR METER.

■ Display/Meaning:

Meaning	Item Name	Ex.	RS-232C command
HOUR METER(PANEL)	PANEL	00151H 21M	QIP
HOUR METER(MTB)	MTB	00151H 21M	–
POWER ON COUNTER	P-COUNT	00000095 TIMES	QIP
SYSTEM SERIAL	SERIAL		QIP

The SYSTEM SERIAL displays only FHD. It corresponds by sticking the seal in G7 model.

The PANEL-side's HOUR METER/P-COUNT acquires information from the PANEL-side.

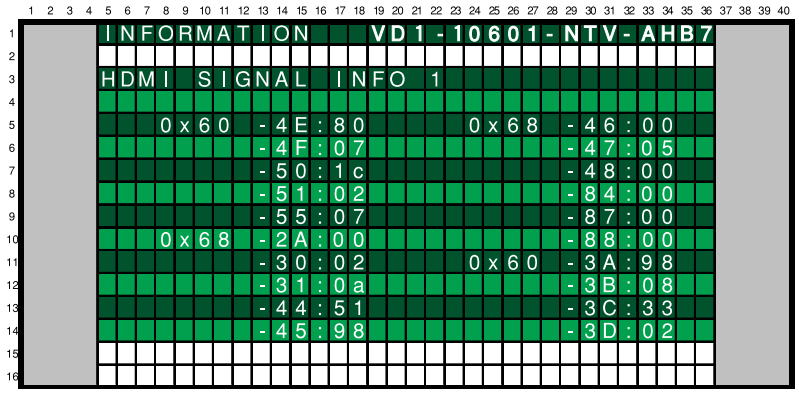


■Operation:

Even if [←] key or [→] key is pushed, "CLEAR <=> YES" <=> "CLEAR <=> NO" is repeated.

If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

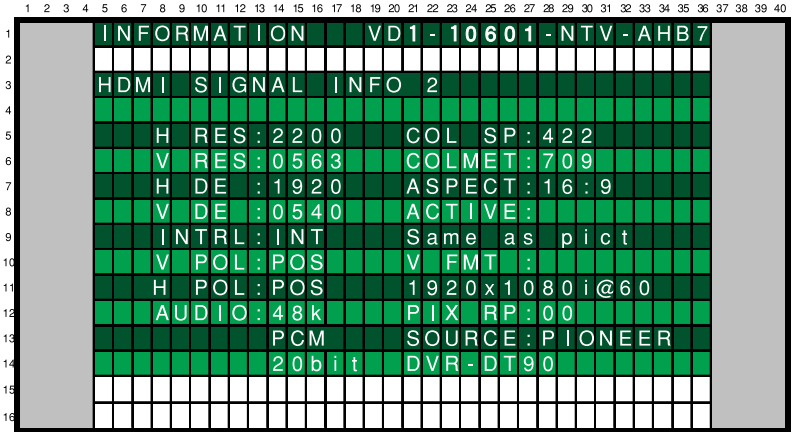
8.2.1.7 HDMI SIGNAL INFO 1



■Displays the input signal information of HDMI terminal.

HDMI SIGNAL INFO 1		
SA		Context
0x60	- 4E:	Video information: valid horizontal pixel numbers (low order bit)
	- 4F:	Video information: valid horizontal pixel numbers (high order bit)
	- 50:	Video information: valid vertical line numbers (low order bit)
	- 51:	Video information: valid vertical line numbers (high order bit)
	- 55:	Video information: interlace/non-interlace, sink polarity
0x68	- 2A:	Audio information: PCM/non PCM, copyright protected or not
	- 30:	Audio information: sampling frequency
	- 31:	Audio information: sampling bit rate
	- 44:	Audio information: color space
	- 45:	Video information: aspect ratio
	- 46:	Video information: scaling
	- 47:	Video information: video format
	- 48:	Video information: pixel count
	- 84:	Audio information: channel count
	- 85:	Audio information: not used (zero at all times)
	- 86:	Audio infromation: not used (zero at all times)
	- 87:	Audio information: speaker allocation
	- 88:	Audio information (down mix prohibit flag)
0x60	- 3A:	Video information: valid horizontal pixel numbers (low order bit)
	- 3B:	Video information: valid horizontal pixel numbers (high order bit)
	- 3C:	Video information: valid vertical line numbers (low order bit)
	- 3D:	Video information: valid vertical line numbers (high order bit)

8.2.1.8 HDMI SIGNAL INFO 2



■Displays input signal status of HDMI terminal.

Item	Meaning
H RES	Number of horizontal pixels (decimal)
V REES	Number of vertical lines (decimal)
H DE	Number of effectively horizontal pixels (decimal)
V DE	Number of effectively vertical lines (decimal)
INTRL	intetlace (=INT) or progressive(=PRG)
V POL	VSYNC polarity
H POL	HSYNC polarity
AUDIO (1 line)	sampling frequency (Ex. DVD : 48 kHz, CD : 44.1 kHz) *1
AUDIO (2 line)	PCM (PCM) or No PCM (=no PCM)
AUDIO (3 line)	Quantization bit
COL SP	color space (AVI Info) (422 or 444 or RGB) *2
COLMET	colormetry (AVI Info) (SD : 601, HD : 709) *2
ASPECT	aspect (AVI Info)
ACTIVE	video active format (AVI Info)
V FMT	video identification code (AVI Info)
PIX RP	pixel repeat value for 2880 dot
SOURCE (1line)	vender name of let-off device
SOURCE (2line)	model name of let-off device

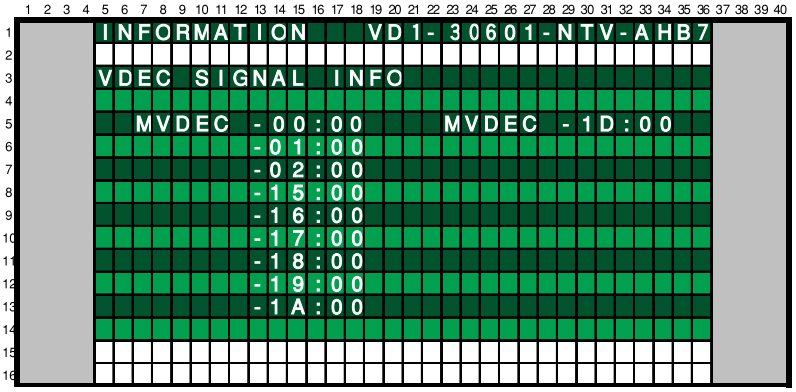
*1 : Confirm if this item is displayed when the audio is not outputted.
*2 : It may not match to the state of source devices when the color is abnormal.

Correspondence between the Display of HDMI FACTORY and the Resolution

Confirm the following 5 items when the video is not outputted.

Input Signal	Display of FACTORY				
	H RES	V RES	H DE	V DE	V FMT
480i (525i)	858	262 or 263	720	240	720x480i @ 60
480p (525p)	858	525	720	480	720x480p @ 60
1080i (1125i)	2200	562 or 563	1920	540	1920x1080i @ 60
720p (750p)	1650	750	1280	720	1280x720p @ 60

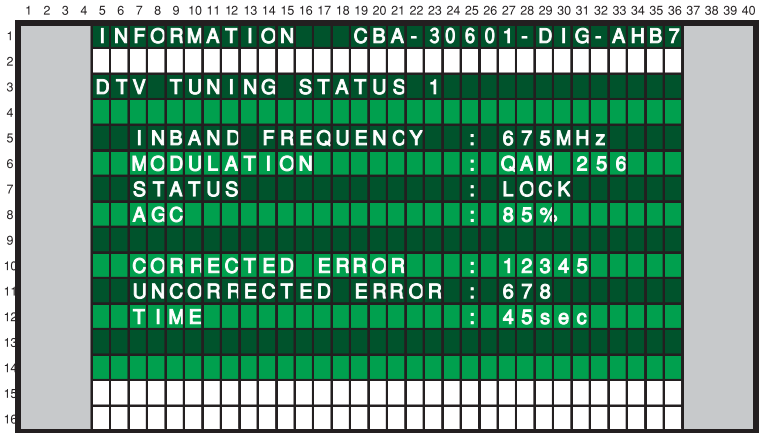
8.2.1.9 VDEC SIGNAL INFO



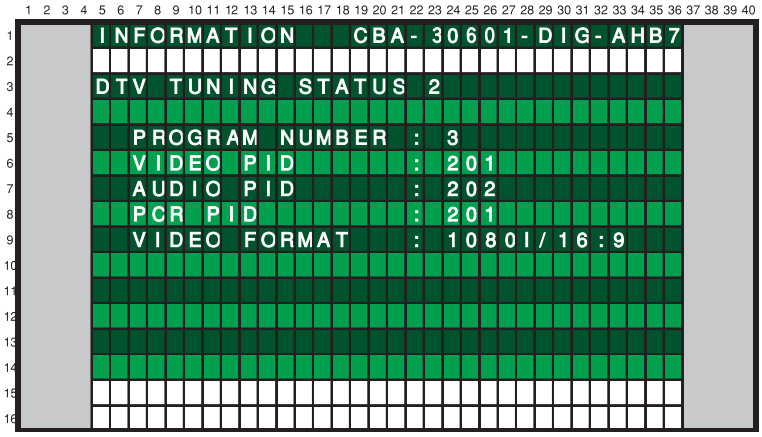
■**Displays input signal status of MVDEC terminal.**

Device	SA	Context
MVDEC	00h	Signal distinct result 1
	01h	Signal distinct result 2
	02h	Flag detection output
	15h	Noise level distinction 1
	16h	Noise level distinction 2
	17h	Non-standard signal detection
	18h	Sub carrier signal detection
	19h	ACC data output
	1Ah	ACC information output
	1Dh	Input signal mode

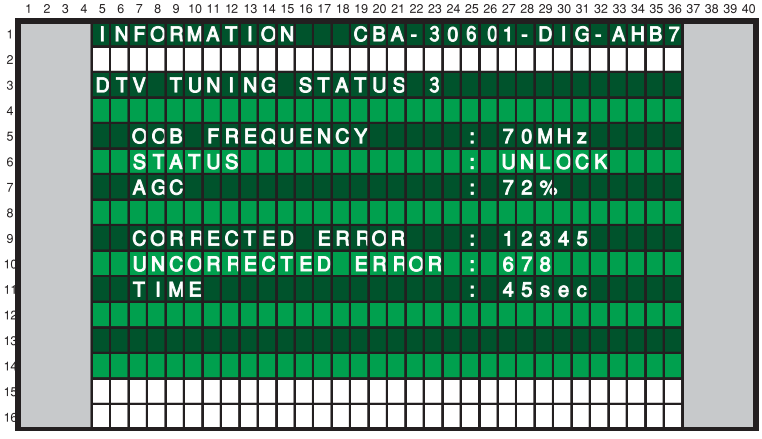
8.2.1.10 DTV TUNING STATUS 1



8.2.1.11 DTV TUNING STATUS 2



8.2.1.12 DTV TUNING STATUS 3



Displays digital broadcast signal information and status upon receiving digital signal.

8.2.1.13 DTV TV-GUIDE BER

Exclusively used for production line. TV-Guide error bit ratio information is displayed.

8.2.1.14 DEBUG INFO

Exclusively used for technical analsyis. Debug information for development use is displayed.

8.2.2 PANEL FACTORY MODE

■ Operation Items

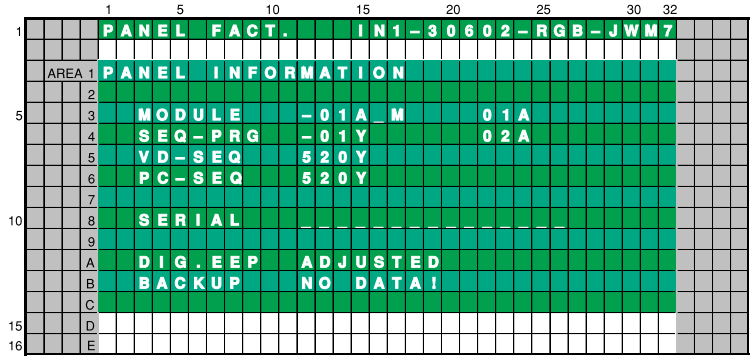
This is the menu screen for the adjustment of the panel. Data acquisition and value adjustment can be performed for the following items:

No.	Indication	Description of functions
8.2.2.1	PANEL INFORMATION	Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed.
8.2.2.2	PANEL WORKS	Operation data, such as accumulated pulse-meter count, accumulated hour-meter count, accumulated power-on count, and the temperature detected by the sensor, are displayed.
8.2.2.3	POWER DOWN	The power-down history is displayed, with the hour-meter values that indicate the hour values when power-downs occurred.
8.2.2.4	SHUT DOWN	The shutdown history is displayed, with the hour-meter values that indicate the hour values when shutdowns occurred.
8.2.2.5	PANEL-1 ADJ (+)	Settings of the driving pulse timing and driving voltage can be performed.
8.2.2.6	PANEL-2 ADJ (+)	White balance and ABL (power consumption) for the panel can be set.
8.2.2.7	PANEL REVISE (+)	The level for correction of panel degradation can be set.
8.2.2.8	ETC. (+)	Copying of backup data and clearance of various data can be performed.
8.2.2.9	RASTER MASK SETUP (+)	The mask indication (RASTER) can be set and indicated.
8.2.2.10	PATTEN MASK SETUP (+)	The mask indication (PATTERN) can be set and indicated.
8.2.2.11	COMBI MASK SETUP (+)	The mask indication (COMBI) can be set and indicated.

■ Details of indications in each layer

8.2.2.1 PANEL INFORMATION

- Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed. No other layers are nested below this layer, and there are no adjustment items.



■ Key operation

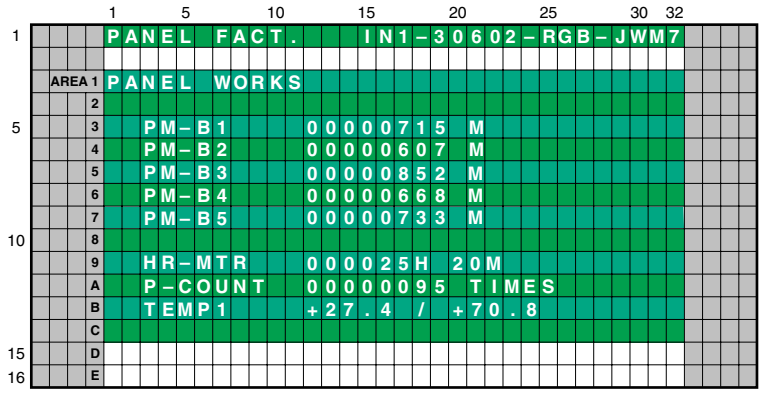
<DOWN> : Shifting to PANEL WORKS
<UP> : Shifting to COMBI MASK SETUP (+)
<L/R> : Updating displayed information

■ Display items:

MODULE : The version of data written in the Module microcomputer (IC3151) is indicated.
SEQ-PRG : The version of data written in the Sequence Program Storage Memory (IC3301) is indicated.
VD-SEQ : The Drive Sequence version for Video mode is indicated.
PC-SEQ : The Drive Sequence version for PC mode is indicated.
SERIAL : The serial number of the module is indicated.
DIG.EEP : The adjusted status of the EEPROM that is mounted on the DIGITAL Assy is indicated.
BACKUP : The adjusted status of the EEPROM for backup that is mounted on the SENSOR Assy is indicated.

8.2.2.2 PANEL WORKS

- Data on operations, such as the accumulated pulse-meter counts, hour-meter count, power-on count, and temperature detected by the sensor, are sent back. No other layers are nested below this layer, and there are no adjustment items.



■ Key operation

<DOWN> : Shifting to POWER DOWN
<UP> : Shifting to PANEL INFORMATION
<L/R> : Updating displayed information

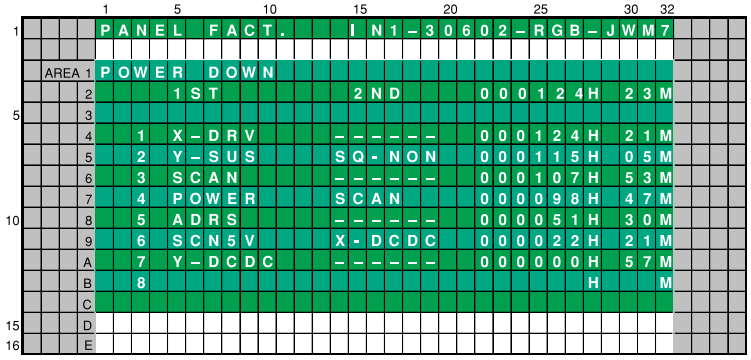
← Temperature unit is " °C (Centigrade) ".

■ Contents of the Display item

- PM-B1 to B5: The accumulated pulse-meter counts for the 5 blocks on the screen are indicated. (the lowest-order digit represents millions of pulses.)
- HR-MTR: The hour-meter value (accumulated power-on hours) is indicated.
- P-COUNT: The accumulated power-on count is indicated.
- TEMP1: The current panel temperature and the historical maximum temperature recorded in memory are indicated.
  The range of temperature indication is from -50.0 to +99.9. (The temperature unit is " °C (Centigrade) ".)

8.2.2.3 POWER DOWN

- The power-down history is displayed. The last most 8 power-down histories are displayed with the hour-meter values that indicate the hours when power-downs occurred. No other layers are nested below this layer, and there are no adjustment items.


PANEL FACT. IN1-30602-RGB-JWM7
AREA 1 POWER DOWN
1ST 2ND 0001248H 23M
1 X-DRV ------ 0001248H 21M
2 Y-SUS SQ-NON 0001158H 05M
3 SCAN ------ 0001078H 53M
4 POWER SCAN 0000098H 47M
5 ADRS ------ 0000518H 30M
6 SCN5V X-DCDC 0000228H 21M
7 Y-DCDC ------ 0000000H 57M
8 H M

■ Key operation

<DOWN> : Shifting to SHUT DOWN
<UP> : Shifting to PANEL WORKS
<L/R> : Updating displayed information

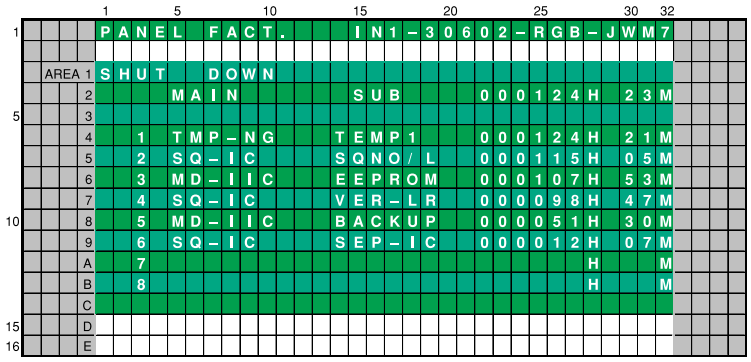
<Causes of power-down and corresponding OSD indications>

Cause of power-down	OSD Indication	Cause of power-down	OSD Indication
POWER SUPPLY Unit	P-PWR	ADDRESS Assy	ADRS
SCAN Assy	SCAN	X DRIVE Assy	XDRV
5V power for SCAN Assy	SCAN5V	DC/DC converter for X drive	X-DCDC
Y DRIVE Assy	YDRV	X-drive SUS circuit	X-SUS
DC/DC converter for Y drive	Y-DCDC	Specification inability	UNKNOWN
Y-drive SUS circuit	Y-SUS		

* When power-down is confirmed, the factor is displayed as "1st", "2nd", according to the accuracy order.
* The power-down history is not recorded when the power-down occurred at the same place and same time.

8.2.2.4 SHUT DOWN

- The shutdown history is displayed. The last most 8 shutdown histories are displayed with the hour-meter values that indicate the hours when shutdowns occurred. No other layers are nested below this layer, and there are no adjustment items.


PANEL FACT. IN1-30602-RGB-JWM7
AREA 1 SHUT DOWN
MAIN SUB 0001248H 23M
1 TMP-NG TEMP1 0001248H 21M
2 SQ-IC SQNO/L 0001158H 05M
3 MD-IIC EEPROM 0001078H 53M
4 SQ-IC VER-LR 0000098H 47M
5 MD-IIC BACKUP 0000518H 30M
6 SQ-IC SEP-IC 0000012H 07M
7 H M
8 H M

■ Key operation

<DOWN> : Shifting to PANEL-1 ADJ (+)
<UP> : Shifting to POWER DOWN
<L/R> : Updating displayed information

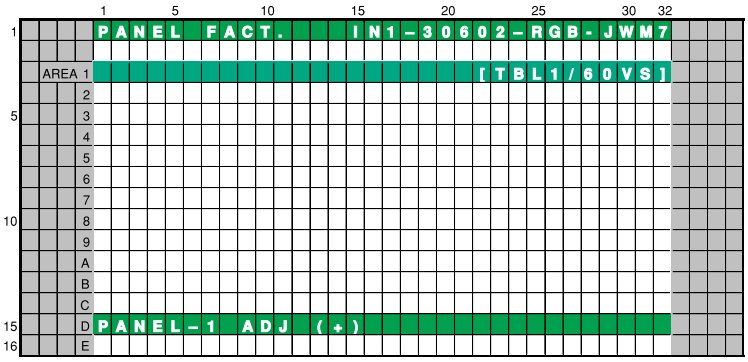
* When there is detail information when shutdown occurred, the possible defective part is displayed as Sub information.

<Causes of shut-down and corresponding OSD indications>

Cause of shut-down (MAIN)		Subcategory of Cause of shut-down (SUB)	
Item	**OSD Indication**	**Item**	**OSD Indication**
Drive Sequence Processing IC	SQ-IC	Communication Error	RTRY
		Drive Sequence Stop	SQNO
		Communication Busy	BUSY
		Version Mismatching	VER-HS
MDU-IIC	MD-IIC	MAIN EEPROM Communication Error	EEPROM
		BACKUP EEPROM Communication Error	BACKUP
		DAC Communication Error	DAC
High temperature of the panel	TMP-NG	Temperature NG	TEMP

8.2.2.5 PANEL-1 ADJ (+)

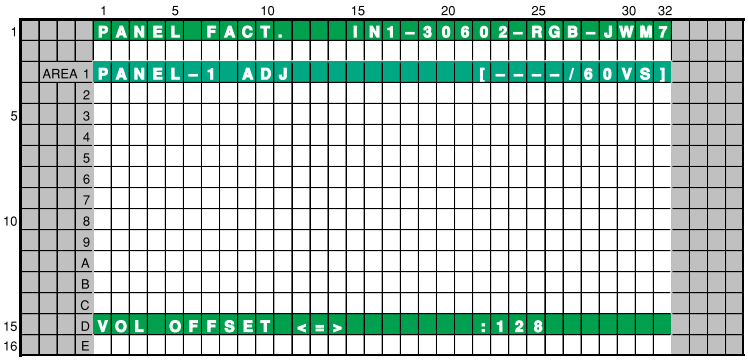
- Timing and voltage for the driving pulse are set. At third line of the screen, the WB (White Balance) table and frequency table indicating operation status are displayed, and at fifteenth line of the screen, the item for the upper nested layer (PANEL-1 ADJ [+]) is displayed. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ Key operation

<DOWN> : Shifting to PANEL-2 ADJ (+)
<UP> : Shifting to SHUT DOWN
<SET> : Shifting to the next nested layer

- When the screen is shifted to the next nested layer below, the item of the layer above is indicated at third line of the screen, and the item of the layer below is indicated at fifteenth line.
- The configuration of the menu screen is the same for any adjustment item that has lower layers.

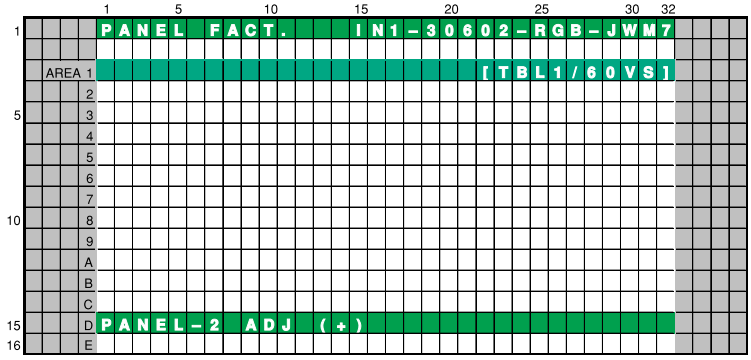


■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/ setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<VOL+> : Adding by 10 to the adjustment/ setting value
<VOL-> : Subtracting by 10 from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

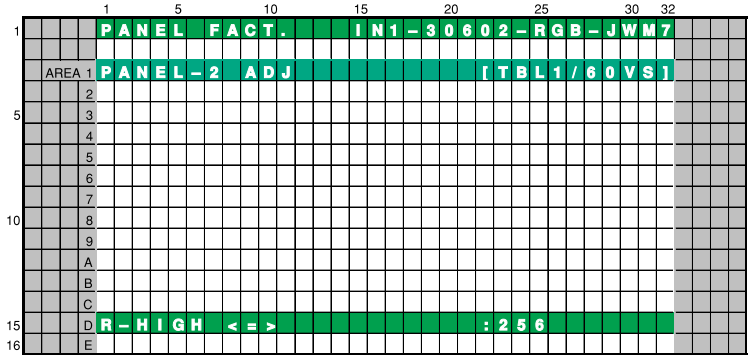
8.2.2.6 PANEL-2 ADJ (+)

- White balance can be adjusted by adjusting R, G, and B gain. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ Key operation

<DOWN> : Shifting to PANEL REVISE (+)
<UP> : Shifting to PANEL-1 ADJ (+)
<SET> : Shifting to the next nested layer

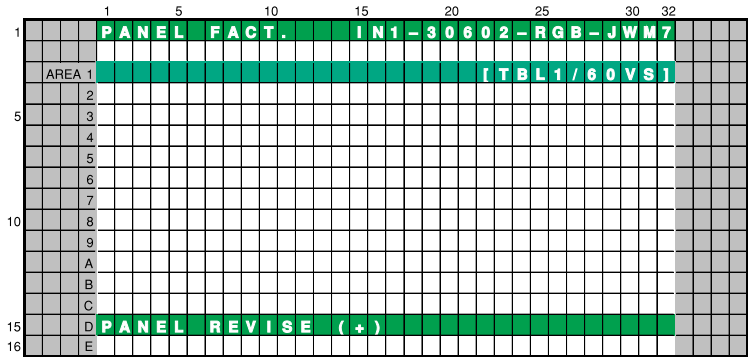


■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/ setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<VOL+> : Adding by 10 to the adjustment/ setting value
<VOL-> : Subtracting by 10 from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

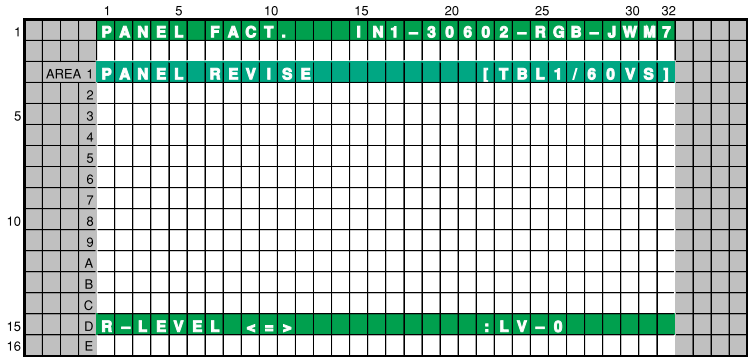
8.2.2.7 PANEL REVISE (+)

- A setting for panel degradation correction can be made. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ **Key operation**

<DOWN> : Shifting to ETC.(+)
<UP> : Shifting to PANEL-2 ADJ (+)
<SET> : Shifting to the next nested layer

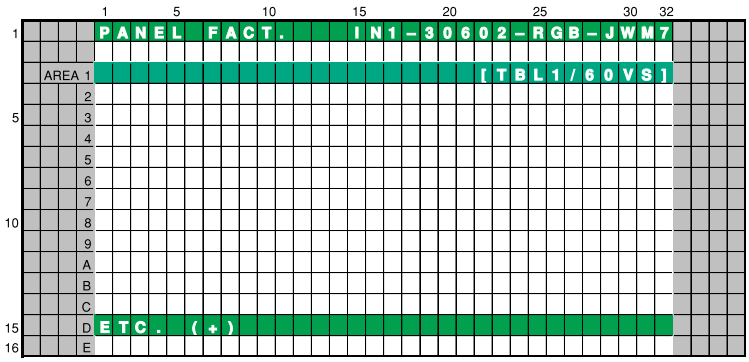


■ **Key operation**

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

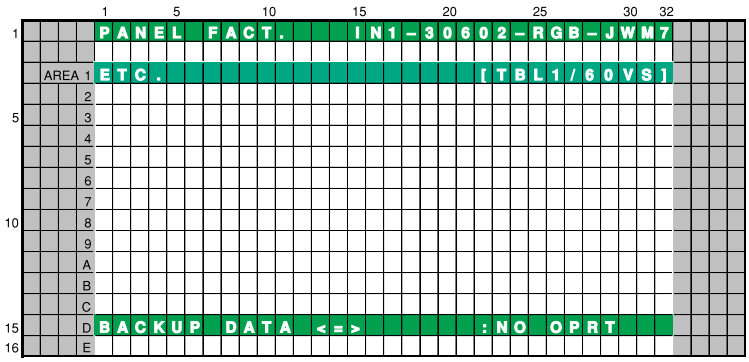
8.2.2.8 ETC. (+)

- The setting about the backup of panel adjusting value and various data on panel operational information can be cleared. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ **Key operation**

<DOWN> : Shifting to RASTER MASK SETUP (+)
<UP> : Shifting to PANEL REVISE (+)
<SET> : Shifting to the next nested layer

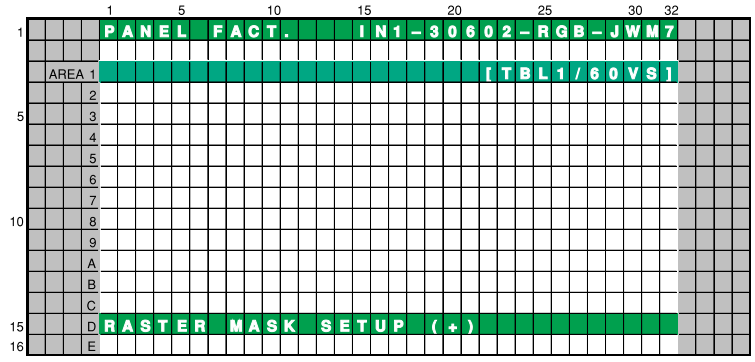


■ **Key operation**

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

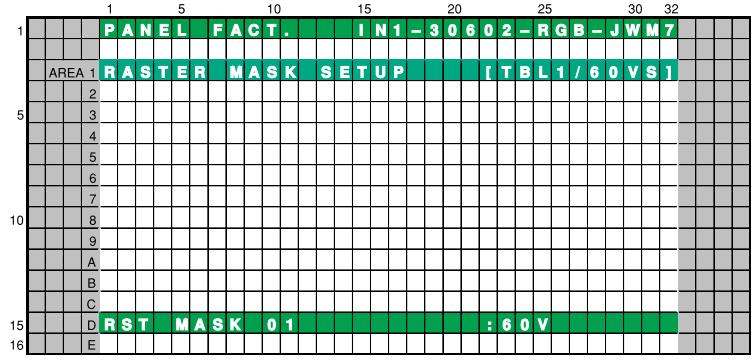
8.2.2.9 RASTER MASK SETUP (+)

- This menu set the RASTER MASK and the drive sequence at RASTER MASK state. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ Key operation

<DOWN> : Shifting to PATTEN MASK SETUP (+)
<UP> : Shifting to ETC. (+)
<SET> : Shifting to the next nested layer



■ Key operation

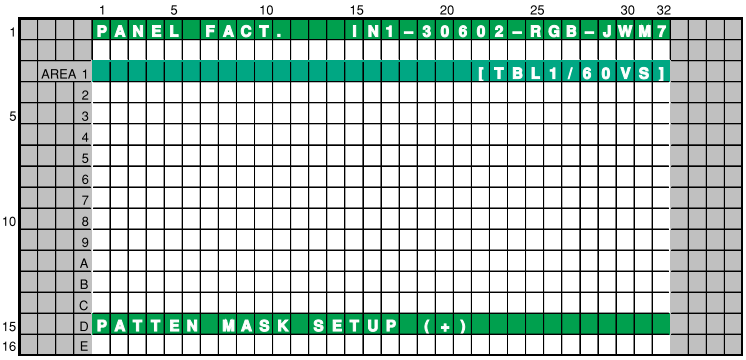
<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
- 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

5 6 7 8

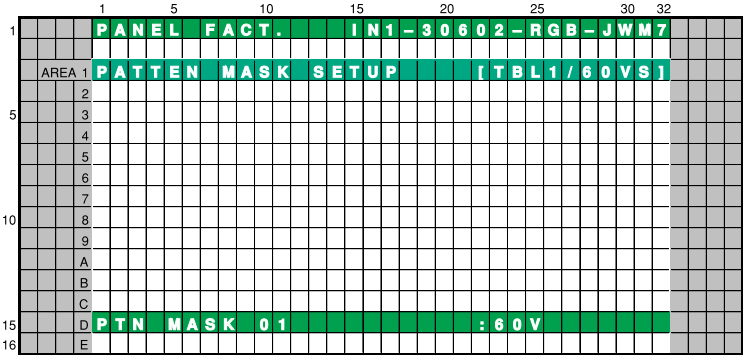
8.2.2.10 PATTEN MASK SETUP (+)

• This menu set the PATTEN MASK and the drive sequence at PATTEN MASK state.



■ Key operation

<DOWN> : Shifting to COMBI MASK SETUP (+)
<UP> : Shifting to RASTER MASK SETUP (+)
<SET> : Shifting to the next nested layer



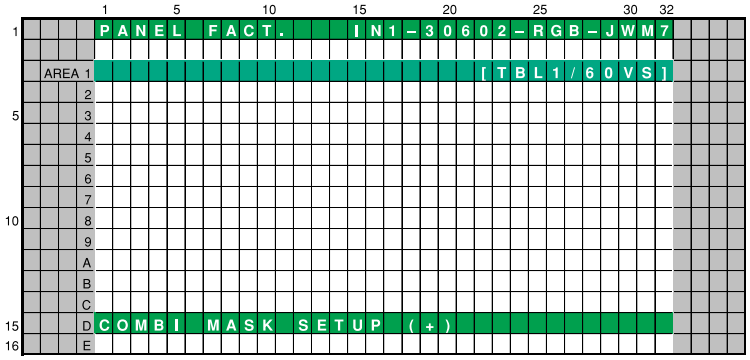
■ Key operation

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

• The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
• 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

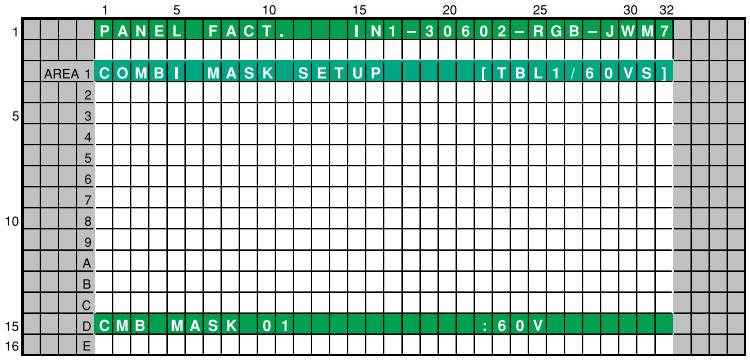
8.2.2.11 COMBI MASK SETUP (+)

• This menu set the COMBI MASK and the drive sequence at COMBI MASK state.



■ Key operation

<DOWN> : Shifting to PANEL INFORMATION
<UP> : Shifting to PATTEN MASK SETUP (+)
<SET> : Shifting to the next nested layer



■ Key operation

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

• The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
• 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

8.2.3 OPTION MODE

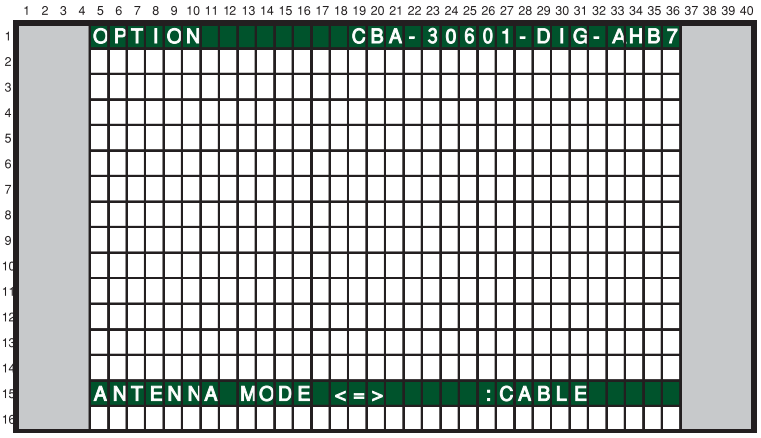
■**Operation item**

No.	Function/Display	Content	RS232C
1	EDID WRITE MODE ⇔	DISABLE ⇔ ENABLE	-
2	ANTENNA MODE ⇔	CABLE ⇔ AIR	-
3	AFT ⇔	Controls AFT action by turing ON / OFF	-

8.2.3.1 EDID WRITE MODE

Exclusively used for production line.

8.2.3.2 ANTENNA MODE



Receiving Cable/Air signal with equipped/unequipped DTB tuner.

① When DTV tuner is equipped
It is effective during tuner function only (others are gray-downed). The currently viewed ANT A/ANT B function's cable/air (both analog and digital) signal are changed. The channel settings are memorized (memorized by DTV side).

② When DTV tuner is unequipped
It is possible for ANT A/ANT B function to receive air/cable signal.
Channel settings are not memorized. But after leaving factory mode, the settings are maintained.
If the air/ cable signal is changed, the reserved allocation map is written.
For example, if the signal is changed to air, then the air's broadcast map is configured, and cable's broadcast map is destroyed.
If the signal is changed to cable, then the cable's broadcast map is configured, and air's broadcast map is destroyed.

OSD display	Funcrion	Control device
CABLE	Change the antenna setting to cable	
AIR	Change the antenna setting to air	

8.2.3.3 AFT

Exclusively used for production line.

8.2.4 INITIALIZE MODE

■ **Operation item**

No.	Display	Content	RS232C
1	SYNC DET(+)	Exclusively used for technical analsyis.	-
2	SG MODE	Paired SG_MODE with SG_PATTERN. Select SG Route.	-
3	SG PATTERN	Paired SG_MODE with SG_PATTERN. Select SG Pattern.	-
4	SIDE MASK LEVEL(+)	Configure the color of the side mask.	BSL GSL RSL
5	FINAL SETUP(+)	Initialize flash memorys on virgin product status	FST
6	HMG/HG SERVICE MODE	Enter HMG/HG SERVICE MODE	-
7	CVT AUTO	Exclusively used for technical analsyis.	-
8	HDMI INTR POSITION(+)	Exclusively used for technical analsyis.	-

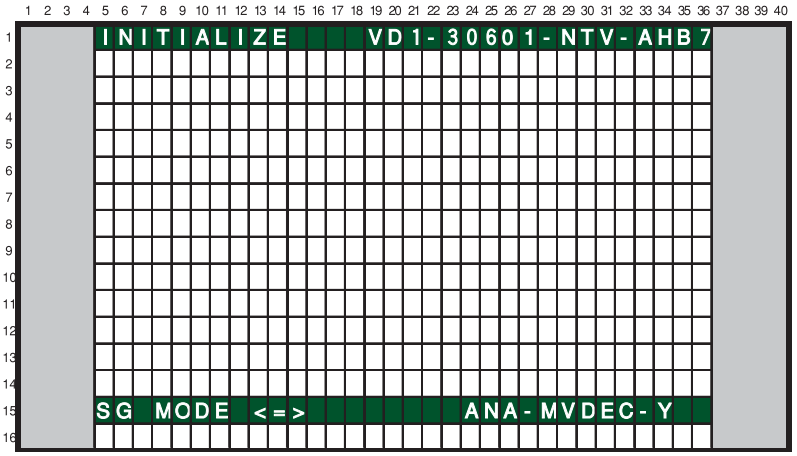
Note : When there is an altered history due to an open TRAP SW, if the "DISPLAY" key is held for at least 5 seconds on the above menu, the altered history will be cleared and the unit will be back to normal.

8.2.4.1 SYNC DET(+)

Exclusively used for technical analsyis (details omitted).

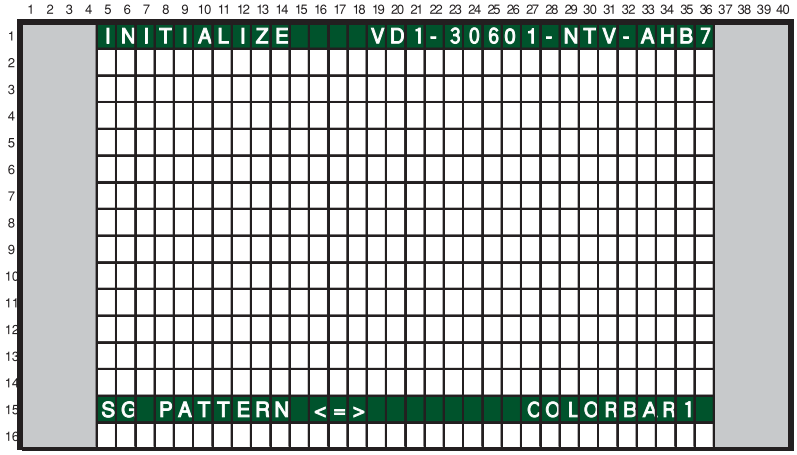
8.2.4.2 SG MODE

SG MODE (SG's route selection)/SG PATTERN (signal pattern selection) are used as pair.
In SG MODE, select the SG route and then select the SG pattern to be sent by the selected route. In SG MODE, make sure to select the route first.



No.	Display	Content
1	SG OFF	SG Mode is OFF.
2	DIG MVDEC YCBCR	MAIN VDEC: YCbCr (Digital output mode)
3	ANA MVDEC YCBCR	MAIN VDEC: YCbCr (Analog output mode)
4	ANA MVDEC Y	MAIN VDEC: Y (Analog output mode: SG VDEC return setting)
5	ANA AD YCBCR	AD: YCbCr
6	ANA AD RGB	AD: RGB

8.2.4.3 SG PATTERN

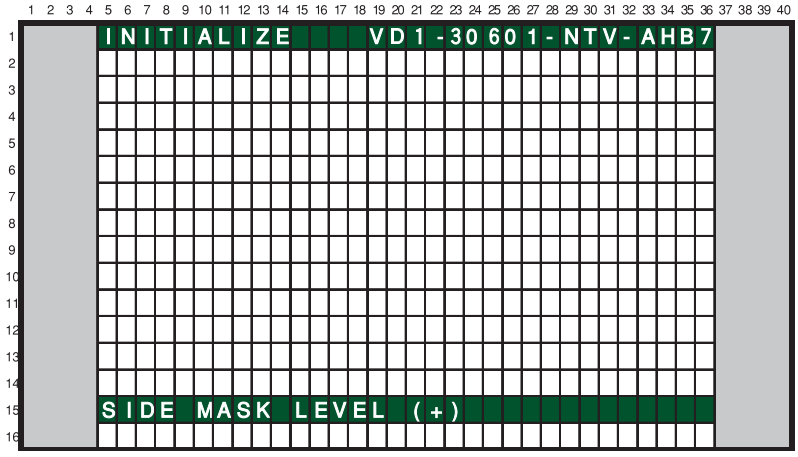


No.	Function/Display	SG Pattern(Brightness IRE Level/Color)
1	COLOR BAR1	Colorbar (75%)
2	COLOR BAR2	Colorbar (100%)
3	RAMP1	Ramp (100% white)
4	RAMP2	Ramp (100% Yellow)
5	RAMP3	Ramp (75% Green)
6	RAMP4	Ramp (75% Red)
7	RAMP5	Ramp (75% Blue)
8	RASTER1	Raster (100% White)
9	RASTER2	Raster (75% Yellow)
10	RASTER3	Raster (75% Cyanide)
11	RASTER4	Raster (75% Green)
12	RASTER5	Raster (75% Magenta)
13	RASTER6	Raster (75% Red)
14	RASTER7	Raster (75% Blue)
15	RASTER8	Raster (-% Black)
16	10STEP1	10STEP (100% white)
17	10STEP2	10STEP (100% Yellow)
18	10STEP3	10STEP (75% Green)
19	10STEP4	10STEP (75% Red)
20	10STEP5	10STEP (75% Blue)

■Notes when using SG MODE/SG PATTERN

- During factory mode, choose the correct route when changing.
- Basically, during VDEC SG output, make sure to connect SG output's Y or G to the AVI input terminal of VDEC.
- During SG MODE, turn off the blanking 50IRE setup function.
- During VDEC SG output, set the YC seperation setting to NTSC.
- It is possible to use ANALOG OUT MODE together during DIGITAL OUT MODE. The Main VDEC can output digital color difference, in which colors will appear. But the route to VDEC input cannot be analysed therefore care should be taken when using. Depending on the situation, please use the proper analog/digital output.
- The SG MODE outputs color difference and RGB only. Therefore, in the case of CVBS, only the Y input is used resulting in no color. This is not a damage result nor error.
- The SG MODE's ANA AD RGB (route to input 525i to AD by RGB) as a set's route, the setting does not exist. For this account the latter part from MVDEC does not have set values, resulting in having funny colors in colorbar, the brightness changes after switching, etc. This is not a damage result nor error.
- Depending on MVDEC's part version, ANA_MVDEC_YCBCR may not display colors.

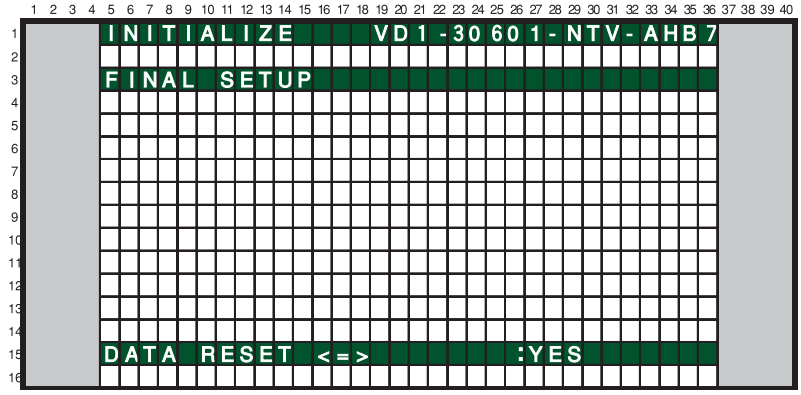
8.2.4.4 SIDE MASK LEVEL



To configure sidemask's R, G, B level (To adjust the values, input signal is required).

No.	Display	Content	RS232C
1	R MASK LEVEL ⇔	Adjust Side Mask R (Initial value : 80, Adjustable range: 000-255)	RSL
2	G MASK LEVEL ⇔	Adjust Side Mask G (Initial value : 80, Adjustable range: 000-255)	GSL
3	B MASK LEVEL ⇔	Adjust Side Mask B (Initial value : 80, Adjustable range: 000-255)	BSL

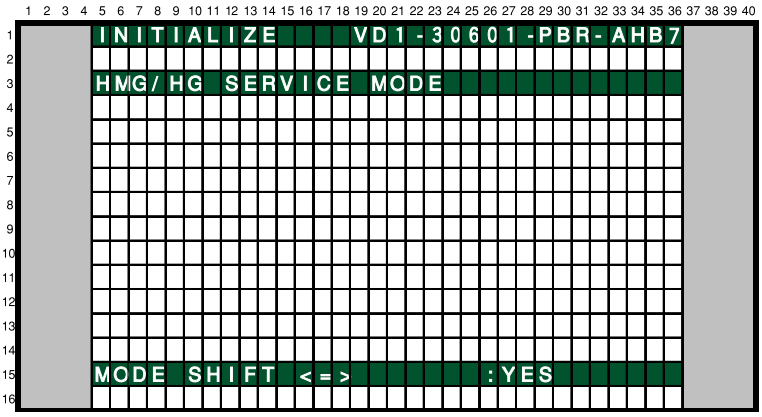
8.2.4.5 FINAL SET UP



To reset each memory value sto factory default values. Factory command is "FST".
When the configuration is set to <NO> and the [SET] key is pressed, no action is taken and the menu returns to previous screen.
When the configuration is set to <YES> and the [SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the Power cord after the FINAL SETUP.
When replacing the MAIN ASSY, the FINAL SETUP is required.

8.2.4.6 HMG/HG SERVICE MODE



The value of all memorized data are set to shipment status.
If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, HMG/HG SERVICE mode will be done.

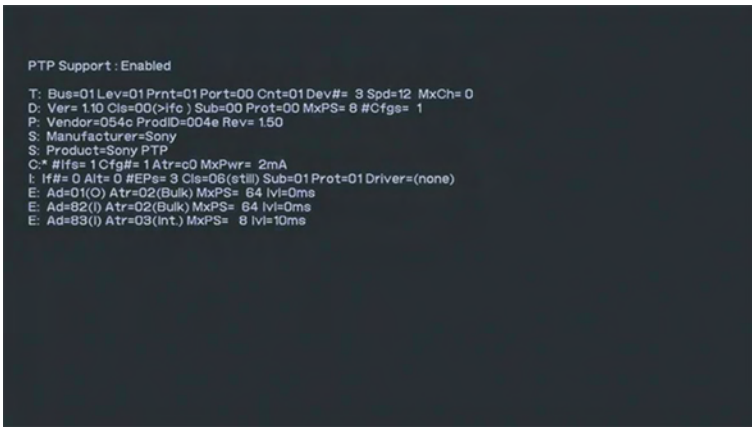
For ELITE model
Be sure to do above procedure at input fuction except HMG.

■ 2nd FACTORY MODE

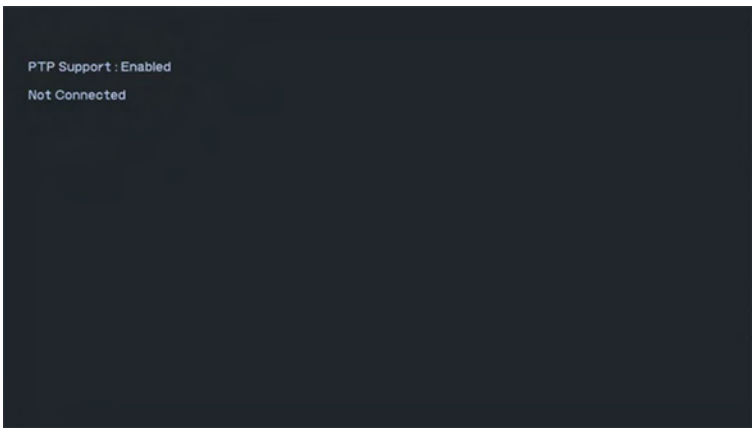
[Home Gallery] (Regular Model)

1. Home Gallery Screen

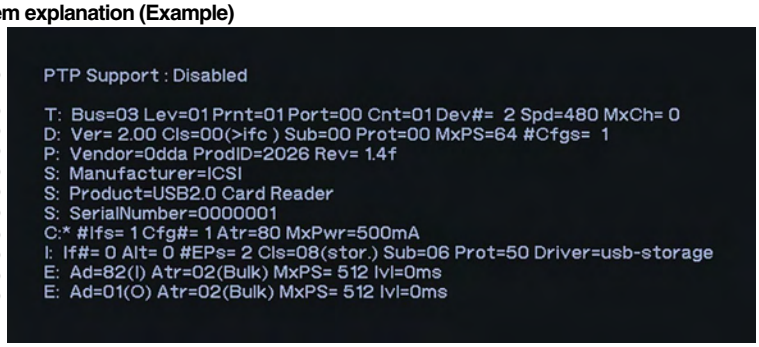
(1) When the device is connected


PTP Support : Enabled
T: Bus=01 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#= 3 Spd=12 MxCh= 0
D: Ver= 1.10 Cls=00(>ifc) Sub=00 Prot=00 MxPS= 8 #Cfgs= 1
P: Vendor=054c ProdID=004e Rev= 1.50
S: Manufacturer=Sony
S: Product=Sony PTP
C:* #Ifs= 1 Cfg#= 1 Atr=c0 MxPwr= 2mA
I: If#= 0 Alt= 0 #EPs= 3 Cls=06(still) Sub=01 Prot=01 Driver=(none)
E: Ad=01(O) Atr=02(Bulk) MxPS= 64 Ivl=0ms
E: Ad=82(I) Atr=02(Bulk) MxPS= 64 Ivl=0ms
E: Ad=83(I) Atr=03(Int.) MxPS= 8 Ivl=10ms

(2) When the device is not connected



(3) Each item explanation (Example)


① PTP Support : Disabled
② T: Bus=03 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#= 2 Spd=480 MxCh= 0
③ D: Ver= 2.00 Cls=00(>ifc) Sub=00 Prot=00 MxPS=64 #Cfgs= 1
④ P: Vendor=0dda ProdID=2026 Rev= 1.4f
⑤ S: Manufacturer=ICSI
⑥ S: Product=USB2.0 Card Reader
⑦ S: SerialNumber=0000001
⑧ C:* #Ifs= 1 Cfg#= 1 Atr=80 MxPwr=500mA
⑨ I: If#= 0 Alt= 0 #EPs= 2 Cls=08(stor.) Sub=06 Prot=50 Driver=usb-storage
⑩ E: Ad=82(I) Atr=02(Bulk) MxPS= 512 Ivl=0ms
⑪ E: Ad=01(O) Atr=02(Bulk) MxPS= 512 Ivl=0ms

① **PTP Support**

Disable	PTP Non-Support	String
Enable	PTP Support	String

② **T (Topology info)**

Bus	Bus Number	Decimal
Lev	Level in topology for this bus	Decimal
Prnt	Parent Device Number	Decimal
Port	Connector/Port on Parent for this device	Decimal
Cnt	Count of devices at this level	Decimal
Dev#	Device Number	Decimal
Spd	Device Speed in Mbps	Decimal
MxCh	Max Children	Decimal

③ **D (Device descriptor info)**

Ver	Device USB version	Hexadecimal
Cls	Device Class	Hexadecimal
Sub	Device Sub Class	Hexadecimal
Prot	Device Protocol	Hexadecimal
MxPS	Max Packet Size of Default Endpoint	Decimal
#Cfgs	Number Configurations	Decimal

④ **P (Product ID info)**

Vendor	Vendor ID code	Hexadecimal
ProdID	Product ID code	Hexadecimal
Rev	Product revision number	Hexadecimal

⑤ **S (String descriptor info - 1)**

Manufacturer		String

⑥ **S (String descriptor info - 2)**

Product		String

⑦ **S (String descriptor info - 3)**

SerialNumber		String

⑧ **C (Configuration descriptor info)**

#Ifs	Number of Interfaces	Decimal
#Cfg	Configuration Number	Decimal
Atr	Attributes	Hexadecimal
MxPwr	MaxPower in mA	Decimal

⑨ **I (Interface descriptor info)**

If#	Interface Number	Decimal
Alt	Alternate Setting Number	Decimal
#Eps	Number of Endpoints	Decimal
Cls	Interface Class	Hexadecimal(String)
Sub	Interface Sub Class	Hexadecimal
Prot	Interface Protocol	Hexadecimal
Driver	Driver name	String

⑩ **E (Endpoint descriptor info)**

⑪ **E (Endpoint descriptor info)**

Ad	Endpoint Address (I=In, O=Out)	Hexadecimal(String)
Atr	Attributes	Hexadecimal(String)
MxPS	Endpoint Max Packet Size	Decimal
Ivl	Interval (max) between transfers	Decimal

2. End method

It is the same as the case that Home Gallery displays.

9. LIST OF RS-232C COMMANDS

9.1 RS-232C COMMANDS OUTLINE

9.1.1 PREPARED TOOLS

It is necessary to prepare the following tools to use RS-232C command.

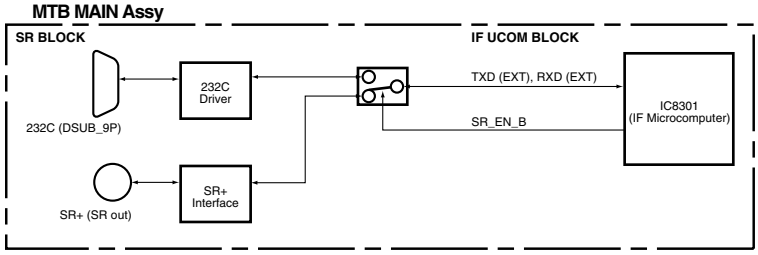
- PC
- Application for control
- 232C cable (straight)

* It is not likely to operate correctly in Win98 function/ ME and Win for foreign countries.
* The setting of the Com port cannot be communicated if it has not been done correctly. (Please follow a operating instructions of the PC about the Com port.)

9.1.2 USING RS-232C COMMANDS

For the PDP-4271HD/KUCXC, PDP-5071PU/KUCXC, PRO-940HD/KUCXC and PRO-1140HD/KUCXC series Plasma Displays, the circuitry is structured as shown in the diagram below to support the SR+ system. Controlling with either the SR+ system or RS-232C commands can be selected. As the SR+ system is selected at shipment, to control with RS-232C commands in servicing it is necessary to switch the paths. After servicing, be sure to return the setting to the SR+ system.

● **Rough diagram of switching between SR+ and RS-232C**



■ **How to switch SR+/RS-232C ?**

There are "How to switch SR+/RS-232C by remote control in Standby Mode" and "How to switch SR+/RS-232C by remote control in the INTEGRATOR MENU" as a Method

① **To select SR+/RS-232C by remote control in Standby Mode**

During Standby mode, the following operation is done within 10 seconds.
To select from SR+ to RS-232C/To select from RS-232C to SR+)
During standby mode, hold the [**VOLUME+(or-)**] key on the remote control unit pressed for 3-10 seconds. →Then within 3 seconds after the key is released, hold the [**2-screen**] key released, use the [**SET(ENTER)**] key on the remote control unit to set to RS-232C(the baud rate last selected is chosen) or the [**HOME MENU**] key to set to SR+

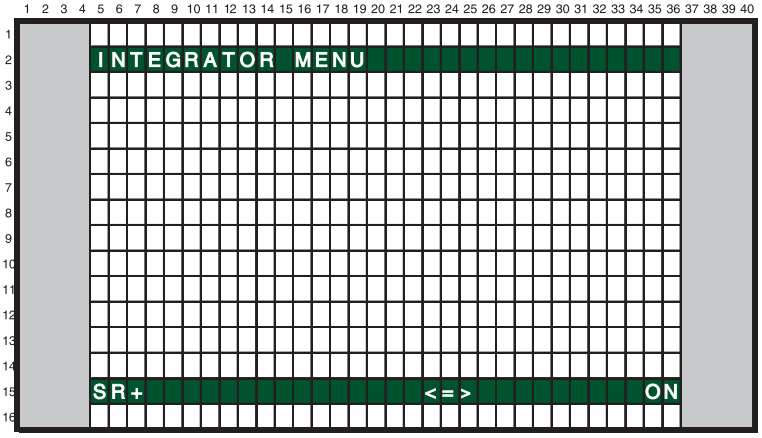
During IF Standby mode (once 10 seconds or more has passed after the LED goes dark during communication), the first key press may not be accepted. In such a case, for a key operation, first press any key other than the [**POWER**] key and [**CH**] keys, then the desired key.

At the switch SR+/RS-232C, the LED will be blinked on the fixed time.

② **To select SR+/RS-232C in the INTEGRATOR MENU**

How to enter INTEGRATOR MENU.
During standby mode, press the [**Home Menu**] key, and then press the [**POWER**] key within 3 seconds. Or during Factory mode, hold the [**INTEGRATOR**] key.

In INTEGRATOR MENU, there is a OSD where SR+(or RS-232C) is turned on/off, and it switches on the screen.



9.1.3 COMMAND PROTOCOL

■Communication protocol : Asynchronous serial communication by RS-232C

Start bit length : 1 bit
Data width : 8 bit (ASCII code/ no distinction between upper case and lower case)
Parity : None
Stop bit length : 1 bit
Baud rate : 1200/2400/4800/19200/38400 bps (Initial value : 9600 bps)

■ Adjustment function

Direct effectivity of numbers : When a number is transmitted after a command, an adjustment value can be directly set.

■ Data format

The format of the control signal transmitted from the user side controller is as described below.
STX (02Hex) is arranged at the time of communication start and ETX (03Hex) is arranged at the time of data transmission complete, and ID, command and parameter are arranged in between. Data consists of ASCII type alphanumeric characters, and there is no distinction between the upper case and the lower case.

● In the case of command only
[single function command]

STX	ID	Command	ETX
0x02	**	□□□	0x03

● When setting/adjustment data is accompanied
[setting/adjustment command]

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

■Command processing

Command processing starts as soon as the command is entered.
ID shall be the two asterisks, "**".

■Confirmation of reception

The module microcomputer will make judgment to the command received from the main side, and if the command is judged to be an effective one, processing will be executed. When the system is in the standby status for the next command after completion of the processing, a reply to the received command is sent out. The data to be responded is a data in the upper case after deleting the ID code from the received command.

● When setting/adjustment data is accompanied

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

→ Reply data

STX	Command	Parameter	ETX
0x02	□□□	△△△	0x03

● In the case of command only

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→ Reply data

STX	Command	ETX
0x02	□□□	0x03

When responding, ERR is sent back if the command is unknown, and XXX is sent back if the command itself is valid but it cannot be processed because of its status.

● In the case of invalid command

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→ Reply data

STX	Command	ETX
0x02	ERR	0x03

● In the case of a command not executable due to its status

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→ Reply data

STX	Command	ETX
0x02	XXX	0x03

■Processing in the case of an error

If a communication error occurs between STX and ETX, processing of that command is stopped, and the reception buffer is cleared. In the command reception process, the character string transmitted after the receipt of STX are continued to be stored in the register, and by receipt of ETX, the character string sandwiched between STX and ETX is recognized as a command. If the prepared character string storage buffer (24 bytes including STX, ID and ETX) is exceeded, a reply will not be sent out.

9.1.4 DEFINITION OF COMMAND

■Single function command

It is a command that a command alone will complete an operation, and the command section consists of three characters.

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→

Reply data

STX	Command	ETX
0x02	□□□	0x03

■Adjustment command and adjustment value

It is a command, accompanied by an adjustment value, to change the parameter value, and the command section is also three characters as in the case of a single function command. The adjustment value is a three character decimal numerical data within the range of 000-999. Incidentally, the adjustable range will be different depending on the function to be adjusted. (Be careful as it is not always up to 999.)

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	CNT	128	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	CNT	128	0x03

* XXX will be transmitted if the received command is exceeding the adjustable range of the adjustment value.
* When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

■Setting command and setting value

It is a command, accompanied by a setting value, to change the setting value of the parameter, and the command section consists of three characters. The setting value consists of three characters, and the first character is fixed to S and the remaining two characters are decimal numbers within the range of S00-S99.

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	MKS	S02	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	MKS	S02	0x03

* XXX will be transmitted if the received command does not exist as a setting value.
* When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

■Status acquisition (QUEST) command

This is a command to report the operational status and the setting value to the system side.
When a command is received from the system side, an applicable content depending on the type of command is read out from the memory and sent back.
The command section consists of three characters, and the first character is fixed to Q. The second character and on are set depending on the content of the information.
When sending back a reply data, the received command, various data converted to ASCII code and checksum of that data are added and sent.
The data length will be subject to each individual specification as the content of a reply will be different depending on the type of QUEST command.

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	QS1	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	QS1	•••••••••	0x03

9.2 LIST OF RS-232C COMMANDS

RS-232C commands can be used in Service Factory mode. Before using RS-232C commands, it is necessary to change the factory presetting.
See "6.5.1 OUTLINE OF THE RS-232C".
[Note ; If you want to see version infomation (ex. QS1, QS6, Factory, Menu), Please see 10 seconds after starting.]

■ RS-232C command list

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
A							
ABL	***	Adjusting the upper limit of the power	●		Mod	●	
AMT	S00	Cancelling the Audio mute		●			
	S01	Cancelling the Audio mute		●			
APW	S00	WB correction interlocked with APL: OFF	●			●	
	S01	WB correction interlocked with APL: ON	●			●	
B			**MDU**	**MTB**			
BCP		Copying the backup data in the EEPROM	●			●	
BHI	***	User white balance : BLUE highlight	●				
BLW	***	User white balance : BLUE lowlight	●				
BRT	***	User brightness	●				
BSM	S00	After image/Burning safe mode: OFF	●				
	S01	After image/Burning safe mode: ON	●				
BSL		Adjusting Side Mask Level BLUE		●			
C			**MDU**	**MTB**			
CBU		Clearing backup data of EEPROM	●			●	
CHM		Clearing data of the hour meter	●			●	
CHN	FWD	Changing tuner preset channel (1 step forward)		●			
	REV	Changing tuner preset channel (1 step reverse)		●			
CHR		Clearing data of the hour meter of MTB side		●		●	
CNT	***	User contrast	●				
CMT		Clearing data of the maximum temperature	●			●	
CPC		Clearing power-on count data	●			●	
CPD		Clearing power-down histrory	●			●	
CPM		Clearing data of the pulse meter	●			●	
CSD		Clearing shutdown history	●			●	
CTM		Clearing working log	●			●	
D			**MDU**	**MTB**			
DRV	S00	Main power off	●				
	S01	Main power on	●				
DW*		To subtract *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			
E			**MDU**	**MTB**			
ESV	S00	Setting Power Consumption mode to normal sequence & normal curve	●				
	S01	Setting Power Consumption mode to silent sequence & normal curve	●				
	S02	Setting Power Consumption mode to silent sequence & power-saving curve	●				
F			**MDU**	**MTB**			
FAJ		Determining the flag of the DIGITAL Assy adjustment in "adjustment is completed"	●			●	
FAN		Factory mode off	●	●		●	
FAY		Factory mode on	●	●			
FST		Set each memory setting of MTB side to the shipment state.		●			
G			**MDU**	**MTB**			
GHI	***	User white balance : GREEN highlight	●				
GLW	***	User white balance : GREEN lowlight	●				
GSL		Green side mask level adjustment		●		●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
I							
INA	***	Terrestrial analog signal switched by tuner (ANTENNA A)		●		●	
	***###	Switching the terrestrial digital signal (ANTENNA A) and terrestrial analog signal		●			
	***	Switching the terrestrial analog signal (ANTENNA A)		●			
INB		Switching the terrestrial analog signal (ANTENNA B)		●			
INH		Switching SD card/PCMCIA card		●			
INP	S01	Input switch: INPUT 1		●			
	S02	Input switch: INPUT 2		●			
	S03	Input switch: INPUT 3		●			
	S04	Input switch: INPUT 4		●			
	S05	Input switch: INPUT 5 (JP/US/EU(Step-up) /IBD)		●			
	S06	Input switch: INPUT 6 (JP/US/EU(Step-up) /IBD)		●			
	S07	Input switch: INPUT 7 (JP/US)		●			
M			**MDU**	**MTB**			
MKC	S00	MASK off	●		Mod	●	
	S01	H ramp (slant 1) M	●		Mod	●	
	S02	H ramp (slant 4) M	●		Mod	●	
	S03	Slanting ramp M	●		Mod	●	
	S04	30 for aging	●		Mod	●	
	S05	05 for aging	●		Mod	●	
	S06	Erasing afterimage 1	●		Mod	●	
	S07	Erasing afterimage 2 (RGB: zigzag, V: reverse)	●		Mod	●	
	S08	White (change in luminance level)	●		Mod	●	
	S09	PEAK SEEK RASTER	●		Mod	●	
	S10	For engineering use	●		Mod	●	
MKS	S00	MASK off	●		Mod		
	S01	H ramp (slant 1)	●		Mod	●	
	S02	H ramp (slant 4)	●		Mod	●	
	S03	V ramp (slant 1)	●		Mod	●	
	S04	Slanting ramp	●		Mod	●	
	S05	Window (Hi= 870, Lo= 102)	●		Mod	●	
	S06	Window (Hi= 1023, Lo= 102)	●		Mod	●	
	S07	Window (Hi= 1023)	●		Mod	●	
	S08	Window (Hi= 1023) 4 %	●		Mod	●	
	S09	Window (Hi= 1023) 1.25 %	●		Mod	●	
	S10	Window (1/7 LINE)	●		Mod	●	
	S11	STRIPE (MGT/GRN)	●		Mod	●	
	S12	STRIPE (GRN/MGT)	●		Mod	●	
	S13	B & W, checker (1 line)	●		Mod	●	
	S14	B & W, checker (2 lines)	●		Mod	●	

Command Name		Function	Active U-com MDU	Active U-com MTB	Last Memory	Effective only in Factory mode	Remarks
M							
MKS	S15	B & W, checker (4 lines)	●		Mod	●	
	S16	B & W, checker (8 lines)	●		Mod	●	
	S17	COLOR BAR	●		Mod	●	
	S18	Slanting lines	●		Mod	●	
	S19	Red & black, checker (1 line)	●		Mod	●	
	S20	Red & black, checker (2 lines)	●		Mod	●	
	S21	Red & black, checker (4 ines)	●		Mod	●	
	S22	Red & black, checker (8 lines)	●		Mod	●	
	S23	RGB zigzag, V reverse	●		Mod	●	
	S24	SUS 2000 pulses (black raster)	●		Mod	●	
	S25	Window (Hi= 870, Lo= 102) Pattern 3	●		Mod	●	
	S26	Window (Hi= 1023, Lo= 102) Pattern 3	●		Mod	●	
	S27	Window (Hi= 1023) Pattern 3	●		Mod	●	
	S28	Window (Hi= 1023) 4 % Pattern 3	●		Mod	●	
	S29	Window (Hi= 1023) 1.25 % Pattern 3	●		Mod	●	
	S30	Window (1/7 LINE) Pattern 3	●		Mod	●	
	S31	Noise ON - White	●		Mod	●	
	S32	Noise ON - Red	●		Mod	●	
	S33	Noise ON - Green	●		Mod	●	
	S34	Noise ON - Blue	●		Mod	●	
	S35	Noise ON - Black	●		Mod	●	
	S36	For engineering use	●		Mod	●	
	S37	For engineering use	●		Mod	●	
	S38	For engineering use	●		Mod	●	
	S39	For engineering use	●		Mod	●	
	S51	Raster - White	●		Mod	●	
	S52	Raster - Red	●		Mod	●	
	S53	Raster - Green	●		Mod	●	
	S54	Raster - Blue	●		Mod	●	
	S55	Raster - Black	●		Mod	●	
	S56	Raster - Cyan	●		Mod	●	
	S57	Raster - Magenta	●		Mod	●	
	S58	Raster - Yellow	●		Mod	●	
	S59	RASTER09: Red 760	●		Mod	●	
	S60	RASTER10: Cyan 450	●		Mod	●	
	S61	RASTER11: Green 835	●		Mod	●	
	S62	RASTER12: Pale green	●		Mod	●	
	S63	RASTER13: Gray 918	●		Mod	●	
	S64	RASTER14: Yellow egg color	●		Mod	●	
	S65	RASTER15: Beige	●		Mod	●	
	S66	RASTER16: Sky color	●		Mod	●	
	S67	RASTER17: Pale purple	●		Mod	●	
	S68	RASTER18: Magenta 53	●		Mod	●	
	S69	RASTER19: Red 1023+	●		Mod	●	
	S70	RASTER20: Green 1023+	●		Mod	●	
	S71	RASTER21: Blue 1023+	●		Mod	●	
	S72	RASTER22: Red 588+	●		Mod	●	
	S73	RASTER23: Green 588+	●		Mod	●	
	S74	RASTER24: Blue 588+	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MST	S00	Display one screen		●			
	S01	PsideP (Main size : normal)		●			
	S02	PinP (Right_down)		●			
	S03	PinP (Right_up)		●			
	S04	PinP (Left_up)		●			
	S05	PinP (Left_down)		●			
	S06	PsideP (Main size : center)		●			
	S07	PsideP (Main size : large)		●			
	S08	SWAP (Exchanging sub-screen)		●			
O			**MDU**	**MTB**			
OSD	S00	Turning OSD setting to off		●			
	S01	Turning OSD setting to on		●			
P			**MDU**	**MTB**			
PAV	S**	Switching panel functions interlocked with the AV selection	●				
PBH	***	Panel white balance adjustment - Blue highlight	●		Mod	●	
PBL	***	Panel white balance adjustment - Blue low light	●		Mod	●	
PDM	S00	Passing PD signals to the Power SUPPLY Unit => Power-down	●				
	S01	Not passing PD signals to the Power SUPPLY Unit => No power-down	●				
PFN		Factory mode: off	●			●	
PFS		Setup at shipment	●			●	
PFY		Factory mode: on	●			●	
PGH	***	Panel white balance adjustment - Green highlight	●		Mod	●	
PGL	***	Panel white balance adjustment - Green low light	●		Mod	●	
PGM	S**	Setting of the gamma table	●				
PMT	S00	Canceling panel muting	●				
	S01	Panel muting	●				
POF		Power off	●	●	Main		
PON		Power on	●	●	Main		
PPT	S00	Panel protection: off	●			●	
	S01	Panel protection: on	●			●	
PRH	***	Panel white balance adjustment - Red highlight	●		Mod	●	
PRL	***	Panel white balance adjustment - Red low light	●		Mod	●	
PUC	S00	Pure cinema: off	●	●		●	
	S01	Pure cinema: standard	●	●		●	
	S02	Pure cinema: advanced	●	●		●	
Q			**MDU**	**MTB**			
QAJ		Acquiring various adjustment values	●				
QIP		Acquiring various input signal data	●				
QMT		Acquiring temperature of MTB side and Fan speed		●			
QNG		Acquiring shut-down information of MTB side		●			
QPD		Acquiring logs of power-down points	●				
QPM		Acquiring data of the pulse meter	●				
QPW		Acquiring panel white balance adjustment values	●				
QS1		Acquiring unit data, such as the software version common to all models, regardless of destination	●	●			
QS2		Acquiring data on the status of the unit, such as temperature	●				
QS6		Acquiring unit data, such as the software version common to all models, regardless of destination		●			
QSD		Acquiring data on shutdown	●				

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
Q							
QSI		Acquiring data related with signals	●				
R			**MDU**	**MTB**			
RBL	S**	Setting of blue level for panel degradation correction	●		Mod	●	
RGL	S**	Setting of green level for panel degradation correction	●		Mod	●	
RHI	***	User white balance - Red highlight	●				
RLW	***	User white balance - Red low light	●				
RRL	S**	Setting of red level for panel degradation correction	●		Mod	●	
RSL	***	Adjustment of the Red side mask level		●		●	
RSW	***	Adjustment of the width of XY reset pulse 1	●		Mod	●	
RYW	***	Adjustment of the width of XY reset pulse 2	●		Mod	●	
S			**MDU**	**MTB**			
SDM	S00	Shutdown enabled	●				
	S01	Shutdown prohibited	●				
SFR	S01	Measures against AM radio noise - Pattern 1	●		Mod	●	
	S02	Measures against AM radio noise - Pattern 2	●		Mod	●	
	S03	Measures against AM radio noise - Pattern 3	●		Mod	●	
	S04	Measures against AM radio noise - Pattern 4	●		Mod	●	
	S05	Measures against AM radio noise - Pattern 5	●		Mod	●	
	S06	Measures against AM radio noise - Pattern 6	●		Mod	●	
	S07	Measures against AM radio noise - Pattern 7	●		Mod	●	
	S08	Measures against AM radio noise - Pattern 8	●		Mod	●	
SMM	S**	Setting of the effective area during streaking correction	●			●	
SN0	***	Setting of the serial No. 0 (panel)	●		Mod	●	
SN1	***	Setting of the serial No. 1 (panel)	●		Mod	●	
SN2	***	Setting of the serial No. 2 (panel)	●		Mod	●	
SN3	***	Setting of the serial No. 3 (panel)	●		Mod	●	
SN4	***	Setting of the serial No. 4 (panel)	●		Mod	●	
SZM	S00	Setting the screen size to Dot by Dot or PARTIAL		●			
	S01	Setting the screen size to 4 :3		●			
	S02	Setting the screen size to FULL or FULL1080i		●			
	S03	Setting the screen size to ZOOM		●			
	S04	Setting the screen size to CINEMA		●			
	S05	Setting the screen size to WIDE					
T							
–		–					
U			**MDU**	**MTB**			
UAJ		Determining the flag for the DIGITAL Assy adjustment in "not adjusted"	●				
UP*		To add *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
V							
VFQ	S01	Setting the frequency in Mask mode to VD-48 Hz	●		Mod	●	
	S02	Setting the frequency in Mask mode to VD-50 Hz	●		Mod	●	
	S03	Setting the frequency in Mask mode to VD-60 Hz	●		Mod	●	
	S05	Setting the frequency in Mask mode to VD-72 Hz	●		Mod	●	
	S06	Setting the frequency in Mask mode to VD-75 Hz	●		Mod	●	
	S13	Setting the frequency in Mask mode to PC-60 Hz	●		Mod	●	
	S14	Setting the frequency in Mask mode to PC-70 Hz	●		Mod	●	
	S22	Setting the frequency in Mask mode to VD-50 Hz (nonstandard)	●		Mod	●	
	S23	Setting the frequency in Mask mode to VD-60 Hz (nonstandard)	●		Mod	●	
	S25	Setting the frequency in Mask mode to VD-72 Hz (nonstandard)	●		Mod	●	
	S26	Setting the frequency in Mask mode to VD-75 Hz (nonstandard)	●		Mod	●	
VOF	***	Adjustment of the reference value of Vofs voltage	●			●	
VOL	UP*, DW*, ***	To adjust the volume (to be used in combination with UP*/DW*)		●			
VRP	***	Adjustment of the reference value of Vrst-p voltage	●			●	
VSU	***	Adjustment of the reference value of Vsus voltage	●			●	
W							
WBI	S00	Panel WB standard output mode: off	●			●	
WBI	S01	Panel WB standard output mode: on	●			●	
X							
XSB	***		●		Mod	●	
Y							
YSB	***	Y-SUS-B ADJ	●		Mod	●	
YTB	***	Y-SUSTAIL T2 ADJ	●		Mod	●	
YTG	***	Y-SUSTAIL T1 ADJ	●		Mod	●	
YTW	***	Y-SUSTAIL W ADJ	●		Mod	●	
Z							
ZME		Initializing the video EEPROM data		●		●	
ZPR		Initializing the setting data to which no adjustment command is provided	●			●	

9.3 OUTLINE OF COMMANDS

9.3.1 QS1

■ Acquisition of panel status • • • [QS1]

Model information and version information are returned.

Format	Effective Condition	Function	Remarks
[QS1]	Every time	Output of status	Reply Data : 105 Byte

Array		Size	Remarks
ECO		3	QS1 (Fixed)
1	Display Information 1	1	F
2	Display Information 2	1	7 : G7
3	Display Information 3	1	A : USA
4	Display Information 4	1	*
5	Display Information 5	1	B
6	MdUCon-Boot	3	01A
7	MdUcon-Prg	8	
8	Seq Prs-Boot	3	01A
9	Seq Prs-Prg	8	
10	SQ-VIDEO	4	
11	SQ-PC	4	
12	Panel Type	1	P/F
13	Reserved (*)	7	*******
14	, (Comma)	1	
15	MTB Information 1 (Generation)	1	7 : G7
16	MTB Information 2 (Regional model)	1	A : USA
17	MTB Information 3 (Grade)	1	H : Elite
18	MTB Information 4 (System Type)	1	B
19	Common Version for IF microcomputer.	4	
20	Common Version for Main microcomputer.	8	
21	Boot Version of Main microcomputer.	4	
22	Common Version for Multi-Processor.	8	
23	Boot Version of Multi-Processor.	4	
24	Reserved (*)	24	
25	Check Sum	2	FF

● MTB/MB-side's Information (15-24)	
IF uCON	Common Version of IF-uCON
Main uCon	Common Version of Main-uCON
Main uCon-Boot	Boot Version of Main-uCON
Multi-Pr s	Common Version of Multi-Processor Program.
Multi Prs-Boot	Boot Version of Multi-Processor Program.

1.Resolution/Inch Size	
3	1024*768/42
4	1024*768/43
5	1280*768/50
6	1365*768/50
7	1365*768/60
F	1920*1080/50

2. Panel Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

● MTB/MB Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

● Regional model	
J	JP
A	US
E	EU
G	GE
C	CH
U	AU

3. Grade	
*	Commonness
A	US (reserved)
E	EU (reserved)
J	Japan (reserved)

4. System Type	
*	Commonness
Z	Evaluation

● MTB/MB Product Form	
S	System model
B	One Body Model (SX)
M	Monitor (FHD)

● MTB/MB Grade	
H	Elite / DXA / Step-upD
T	Step-upA /XG / TXC / Re gula r (US)
B	Not used.(For Future)
S	Regular D
R	Regular A

● Panal Type	
P	the past
F	High-effective

● Panel Product Form	
S	System model
B	All-in-one design TV
M	Monitor
D	Standard module
E	Simple module

9.3.2 QS2

■ Acquisition of panel operation data • • • [QS2]

The command QS2 is for acquiring data on the panel's operational information.

Command Format	Effective Operation Modes	Function	Remarks
[QS2]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+23(DATA)+2(CS)= 28 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QS2
1	Notification of mode shifting to STB	1 Byte	1
2	Flag for adjustment of the main unit	1 Byte	0
3	Flag for adjustment-data backup	1 Byte	0
4	"1st PD" data	1 Byte	0
5	"2nd PD" data	1 Byte	0
6	Still picture detection	1 Byte	0
7	Reserved	2 Byte	**
8	Temperature data (TEMP 1)	3 Byte	128 (*1)
9	SD main data	1 Byte	0
10	SD sub data	1 Byte	0
11	Operation status induced by SD	1 Byte	0
12	Data from the hour meter	8 Byte	00000259 (*2)
13	MASK indication	1 Byte	0
CS		2 Byte	4A

Note : (*1) : The data is A/D value from the thermal sensor.
(*2) : "00000259" of "Data from the hour meter" means 2 hours 59 minuts.

6: Still picture detection	
0	Normal screen
1	Still picture

9: SD main data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

10-1: SD-Sub (SQ-IC)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
6	Version mismatching

1: Notification of mode shifting to Standby	
0	Entering Standby mode failed
1	Entering Standby mode succeeded

2: Adjustment of the main unit	
0	Adjustment completed
1	Adjustment not completed

3: Adjustment-data backup	
0	With backup data
1	No data (default)

4, 5: PD data	
0	No PD data
1	Not used
2	POWER
3	SCAN
4	SCN-5V
5	Y-DRV
6	Y-DCDC
7	Y-SUS
8	ADRS
9	X-DRV
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

10-2: SD-Sub (IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

10-3: SD-Sub (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

11: Operation status induced by SD	
0	Normal
1	Relay-off completed
2	During warning indication

13: MASK indication	
0	MASK-OFF
1	MASK-ON

9.3.3 QIP

■ Acquisition of other data on the panel • • • [QIP]

The command QIP is for acquiring data on operational information of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QIP]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+58(DATA)+2(CS)= 63 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QIP
1	SERIAL	15 Byte	- - - - - - - - - - - - - - -
2	HOUR METER	8 Byte	00000000
3	TOTAL HOUR METER	8 Byte	00000000
4	PON COUNTER	8 Byte	00000000
5	TEMP1 acquisition (Temperature value)	5 Byte	+23.5(*)
6	TEMP0 acquisition (Temperature value)	5 Byte	+28.7(*)
7	MAX-TEMP1 acquisition (Temperature value)	5 Byte	+78.3(*)
8	Reserved	4 Byte	****
CS		2 Byte	94

(*) : Centigrade scale

9.3.4 QAJ

■ Acquisition of panel adjustment data (common data) • • • [QAJ]

The command QAJ is for acquiring the panel's factory-preset data.

Command Format	Effective Operation Modes	Function	Remarks
[QAJ]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+41(DATA)+2(CS)= 46 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QAJ
1	V-SUS adjustment value	3 Byte	128
2	V-OFT adjustment value	3 Byte	128
3	V-RST-P adjustment value	3 Byte	128
4	Reserved	3 Byte	***
5	XSB adjustment value	3 Byte	128
6	YSB adjustment value	3 Byte	128
7	YTG adjustment value	3 Byte	128
8	YTW adjustment value	3 Byte	128
9	RSW adjustment value	3 Byte	128
10	YTB adjustment value	3 Byte	128
11	RYW adjustment value	3 Byte	128
12	R-REVICE setting value	1 Byte	0
13	G-REVICE setting value	1 Byte	0
14	B-REVICE setting value	1 Byte	0
CS		2 Byte	B7

• For each REVICE setting value, the level set for RRL, RGL, or RBL is transmitted as one character.

9.3.5 QPW

■ Acquisition of ABL/WB adjustment data • • • [QPW]

The command QPW is for acquiring the factory-preset data about the video of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPW]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+35(DATA)+2(CS)= 40 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QPW
1	Drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T2
4	ABL adjustment value	3 Byte	128
5	R-HIGH adjustment value	3 Byte	256
6	G-HIGH adjustment value	3 Byte	256
7	B-HIGH adjustment value	3 Byte	256
8	R-LOW adjustment value	3 Byte	512
9	G-LOW adjustment value	3 Byte	512
10	B-LOW adjustment value	3 Byte	512
11	Gamma setting	1 Byte	A
12	Streaking correction	1 Byte	1
13	Peripheral luminance correction	1 Byte	0
14	Reserved	1 Byte	*
15	WB interlocked with APL	1 Byte	0
16	Transition of protective operations	1 Byte	0
17	Reserved	2 Byte	**
CS		2 Byte	37

1: Drive sequence

48V	Video 48 Hz
50V	Video 50 Hz
60V	Video 60 Hz
72V	Video 72 Hz
75V	Video 75 Hz
60P	PC 60 Hz
70P	PC 70 Hz

2: Standard/ nonstandard

S	Standard
N	Nonstandard

3: Type of ABL/WB tables

Tn	n: 1 to 4

11: Gamma setting

n	0 to F

12, 15: Setting for Items 12 and 15

0	OFF
1	ON

13: Peripheral luminance correction

0	OFF
2	ON (interlocked with APL)

16: Transition of brightness by protective operations

0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.6 QPM

■ Acquisition of pulse meter value • • • [QPM]

The command QPM is for acquiring the accumulated number of pulses of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPM]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+40(DATA)+2(CS)= 45 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QPM
1	Pulse meter B 1	8Byte	00000000
2	Pulse meter B 2	8Byte	00000000
3	Pulse meter B 3	8Byte	00000000
4	Pulse meter B 4	8Byte	00000000
5	Pulse meter B 5	8Byte	00000000
CS		2Byte	E7

9.3.7 QPD

■ Acquisition of PD logs • • • [QPD]

The command QPD is for acquiring data from the 8 latest power-down (PD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QPD]	All operations	To acquire data on the power-down logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QPD
1	Latest "1st PD" data	1 Byte	A
2	Latest "2nd PD" data	1 Byte	2
3	Data from the hour meter for the latest PD	8 Byte	00010020
4	Second latest "1st PD" data	1 Byte	E
5	Second latest "2nd PD" data	1 Byte	9
6	Data from the hour meter for the second latest PD	8 Byte	00008523
7	Third latest "1st PD" data	1 Byte	4
8	Third latest "2nd PD" data	1 Byte	3
9	Data from the hour meter for the third latest PD	8 Byte	00004335
10	Fourth latest "1st PD" data	1 Byte	2
11	Fourth latest "2nd PD" data	1 Byte	0
12	Data from the hour meter for the fourth latest PD	8 Byte	00000945
13	Fifth latest "1st PD" data	1 Byte	4
14	Fifth latest "2nd PD" data	1 Byte	0
15	Data from the hour meter for the fifth latest PD	8 Byte	00000715
16	Sixth latest "1st PD" data	1 Byte	A
17	Sixth latest "2nd PD" data	1 Byte	2
18	Data from the hour meter for the sixth latest PD	8 Byte	00000552
19	Seventh latest "1st PD" data	1 Byte	A
20	Seventh latest "2nd PD" data	1 Byte	0
21	Data from the hour meter for the seventh latest PD	8 Byte	00000213
22	Eighth latest "1st PD" data	1 Byte	D
23	Eighth latest "2nd PD" data	1 Byte	0
24	Data from the hour meter for the eighth latest PD	8 Byte	000001A7
CS		2 Byte	27

1, 2, 4, 5: PD data	
0	No PD
1	Not used
2	P-POWER
3	SCAN
4	SCN-5V
5	Y-DRIVE
6	Y-DCDC
7	Y-SUS
8	Address
9	X-DRIVE
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

9.3.8 QSD

■ Acquisition of SD logs • • • [QSD]

The command QSD is for acquiring the data from the 8 latest shutdown (SD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QSD]	All operations	To acquire data on the shutdown logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QSD
1	Latest SD data	1byte	1
2	Latest SD subcategory data	1byte	0
3	Data from the hour meter for the latest SD	8byte	00752013
4	Second latest SD data	1byte	5
5	Second latest SD subcategory data	1byte	0
6	Data from the hour meter for the second latest SD	8byte	00495204
7	Third latest SD data	1byte	2
8	Third latest SD subcategory data	1byte	3
9	Data from the hour meter for the third latest SD	8byte	00100355
10	Fourth latest SD data	1byte	2
11	Fourth latest SD subcategory data	1byte	5
12	Data from the hour meter for the fourth latest SD	8byte	00075620
13	Fifth latest SD data	1byte	1
14	Fifth latest SD subcategory data	1byte	0
15	Data from the hour meter for the fifth latest SD	8byte	00000852
16	Sixth latest SD data	1byte	2
17	Sixth latest SD subcategory data	1byte	5
18	Data from the hour meter for the sixth latest SD	8byte	000000451
19	Seventh latest SD data	1byte	0
20	Seventh latest SD subcategory data	1byte	0
21	Data from the hour meter for the seventh latest SD	8byte	00000000
22	Eighth latest SD data	1byte	0
23	Eighth latest SD subcategory data	1byte	0
24	Data from the hour meter for the eighth latest SD	8byte	00000000
CS		2Byte	7D

● SD data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

● SD subcategory (SQ-IC)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
6	Version mismatching

● SD subcategory (MDU-IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

● SD subcategory (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

9.3.9 QS6

QS6 : Returning information of the Flash Device.

Format	Effective Condition	Function	Remarks
[QS6]	Every time	Output of status	

Order	Data	Size	Context
0	Received Command Name	3 byte	'QS6' only
01	Hardware Version of DTV	8 byte	
02	Hardware Serial of DTV	8 byte	
03	Runtime Version of DTV	8 byte	
04	CFE Version	8 byte	
05	KERNEL Version	8 byte	
06	ROOTFS Version	8 byte	
07	FLAGS Information 1	1 byte	
08	FLAGS Information 2	1 byte	
09	FLAGS Information 3	1 byte	
10	FLAGS Information 4	1 byte	
11	FLAGS Information 5	1 byte	
12	FLAGS Information 6	1 byte	
13	Version of CCD-UCOM	4 byte	
14	HMG/HG MODELE Version	10byte	
15	User Password	4 byte	
16	Check Sum	2 byte	

9.3.10 QSI

■ Acquisition of input signal data • • • [QSI]

The command QSI is for acquiring all data on input video signals.

Command Format	Effective Operation Modes	Function	Remarks
[QSI]	All operations	To acquire all data on input video signals	Return data: 3 (ECO)+66(DATA)+2(CS)= 71 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QSI
1	Type of drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T1
4	Total value of PCN	4 Byte	0256
5	Total value of PRH	4 Byte	0256
6	Total value of PGH	4 Byte	0256
7	Total value of PBH	4 Byte	0256
8	Total value of PBR	4 Byte	0512
9	Total value of PRL	4 Byte	0512
10	Total value of PGL	4 Byte	0512
11	Total value of PBL	4 Byte	0512
12	Total value of ABL	3 Byte	128
13	Detection of V frequency	4 Byte	6002
14	Detection of existence of H	1 Byte	Y
15	Reserved	3 Byte	***
16	Obtained APL data	4 Byte	1023
17	Number of SUS pulses	4 Byte	0457
18	Result of detection of still picture	1 Byte	1
19	Result of detection of cracking in the panel	1 Byte	1
20	Result of detection for scanning protection	1 Byte	1
21	Result of detection for external protection	1 Byte	1
22	Transition of protection operation	1 Byte	0
23	Reserved	4 Byte	****
CS		2 Byte	27

14: Detection of existence of H	
N	No H
Y	H detected

18 to 20: Each protection operation status	
0	Setting OFF
1	Setting ON (waiting)
2	Setting ON (during operation)

22: Transition of brightness by protection operation	
0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.11 QMT

QMT : Returning information of temperature and FAN speed.

Format	Effective Condition	Function	Remarks
[QMT]	Every time	Output of status	MTB-side's temperature/FAN rotaing status

Order	Data	Size	Context
0	Received Command Name	3 byte	'QMT' only
1	MTB Temperature	3 byte	
2	MTB FAN Speed	1 byte	0: STOP 1:LOW 2:HIGH
3	Cjheck Sum	2 byte	

9.3.12 QNG

QNG : Returning data (logs keep on Main microcomputer) on shutdown of Multi-Tuner Base.

Format	Effective Condition	Function	Remarks
[QNG]	Every time	Output of status	

Order	Data	Size	Context
0	Received Command Name on MTB	3 byte	'QNG' only
01	Latest NR data	1 byte	
02	Data of subcategory for the latest NG	1 byte	
03	Data of MTB hour meter for the latest NG	7 byte	
04	Data of temperature for the latest NG	3 byte	
05	2'st latest NG data	1 byte	
06	Data of subcategory for the 2'st latest NG	1 byte	
07	Data of MTB hourmeter for the 2'st latest NG	7 byte	
08	Data of temperature for the 2'st latest NG	3 byte	
09	3rd latest NG data	1 byte	
10	Data of subcategory for the 3rd latest NG	1 byte	
11	Data of MTB hourmeter for the 3rd latest NG	7 byte	
12	Data of temperature for the 3rd latest NG	3 byte	
:	:	:	
29	8'st latest NG data	1 byte	
30	Data of subcategory for the 7'st latest NG	1 byte	
31	Data of MTB hour meter for the 7'st latest NG	7 byte	
32	Data of temperature for the 7'st latest NG	3 byte	

■Details of Data and subcategory

<SD Information No.>		
Data	Cause of shutdown	Remarks
0	Normal	
1	failure of communication to Module microcomputer	MODULE (immediately Shutdown)
2	3-wire serial communication of Main microcomputer	Go to subcategory ⇒ No.1
3	IIC communication failure of Main microcomputer & Unknown error	Go to subcategory ⇒ No.2
4	communication failure of Main microcomputer	MAIN (immediately Power Supply OFF)
5	FAN stopped	FAN (immediately Power Supply OFF)
6	Abnormally high temperature at MTB.	TEMP2 (After 30second warning, ture Power Supply off)
7	failure of Digital Tuner	Go to subcategory ⇒ No.3
8	failure of Power Supply	Go to subcategory ⇒ No.4
B	Speaker short-circuit	After 3 second warning, turn the Power Supply OFF.

<No.1 Subcategory Information on "failure in 3-wire serial communication of Main microcomputer">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	IF microcomputer communication failure	IF (immediately Power Supply OFF)
2	MANTA communication failure (MULTI1)	MULTI1 (immediately Power Supply OFF)
4	MANTA communication failure (I/P)	I/P
5	MANTA communication failure (D-SEL)	D-SEL

<No.2 Subcategory Information on "failure in IIC communication of Main mircocomputer">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	Analog Tuner 1 (Front End 1)	FE1 (immediately Power Supply OFF)
2	Analog Tuner 2 (Front End 2)	FE2 (immediately Power Supply OFF)
3	MPX	
4	AV Switch	AV-SW (immediately Power Supply OFF)
5	RGB Switch	RGB-SW (immediately Power Supply OFF)
6	CCD	CCD (immediately Power Supply OFF)
8	Main VDEC	M-VDEC (immediately Power Supply OFF)
A	AD/PLL	ADC (immediately Power Supply OFF)
B	HDMI	HDMI (immediately Power Supply OFF)
G	64k EEPROM	MA-FEP (immediately Power Supply OFF)
H	AUDIO IC	

<No.3 Subcategory Information on "Digital Tuner">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	Failure to DTB Starting	PS/RST (immediately Power Supply OFF)
3	DTV Device Error	Device (immediately Power Supply OFF)
5	TV-Guide Error	TV-G (immediately Power Supply OFF)
7	Home Gallery Application comunication error.	HOME-G (communication error (Retry 16 times) →Do not return after 2 times of soft reset)

<No.4 Subcategory Information on "POWER">		
Data	Cause of shutdown	Remarks
1	DCDC Converter Power Supply reduced	M-DCDC (immediately Power Supply OFF)
2	Relay Power Supply reduced	RELAY (immediately Power Supply OFF)

9.3.13 DRV

■ **DRV**

Drive ON/OFF : ON/OFF control for only the large-power system

Format	Effective Condition	Function	Remarks
[DRV+S00]	Every time	DRIVE OFF	At standby mode, when 10 seconds passed after issuing [DRV+S00], command becomes invalid.
[DRV+S01]		DRIVE ON	

9.3.14 COMMANDS FOR PROHIBITION/PERMISSION OF DTV/HOMENET COMMUNICATION

■ Commands for prohibition/permission of DTV/HomeNet communication

Control device: DTV & HomeNet
Memory: ON/OFF of DTV communication prohibition mode
Applicable models: Only for models for North America

■ Functions

This is a command for forcibly prohibiting communication with DTV (for Elite series panels, communication using HomeNet is included).

Normally, after the panel and the connected DTV are turned on, any operation is prohibited on the panel until startup of the DTV is completed. However, on the production line, to avoid a drain on productivity, such waiting time must be shortened. Thus, for the processes where the DTV is not necessary, such as panel adjustment, the existence of the DTV can be ignored, to shorten waiting time.

■ Commands

DTN	S00	To exit DTV/HomeNet Communication
	S01	To enter DTV/HomeNet Communication

■ Operations

[DTNS01]
<Effective operation mode>
Factory Operation mode
Note: This command must be effective even if the Assy is used alone or installed in the unit.

- Having entered DTV/HomeNet Communication Prohibition mode must be stored in memory.
- The blue LED flashes rapidly to indicate that DTV/HomeNet Communication Prohibition mode is active.

- The next resetting of the main microcomputer is canceled, the main microcomputer judges that DTNS01 is established, then communication with DTV/HomeNet will be prohibited. In such a case, any user operations (FAY command, etc.) entered immediately after the unit is turned on must be effective. Also, any operations other than DTV/HomeNet operations must be effective in the same way as during DTNS00.

[DTNS00]
<Effective operation mode>
Factory Operation mode
Note: This command must be effective even if the Assy is used alone or installed in the unit.

- Having entered DTV/HomeNet Communication Permission mode must be stored in memory.
- It is not necessary to immediately restore communication with DTV/HomeNet. DTV/HomeNet communication must be restored until resetting of the main microcomputer is canceled next time.

■ Supplement

- While ZACS01 is established, the LED for ZAC flashes. The priority of LED indications is as follows:
  PD > Trap-SW > DTV_STB > SD > ZAC >DTN > no backup copy > Standalone operation of the Assy > Normal ON/OFF
- Even if DTNS00 is established, if ZACS01 is established, DTV/HomeNet communication must be prohibited.

9.3.15 OTHER COMMANDS

■ Setting for Factory mode permission/prohibition • • • [FAY/FAN]

The commands FAY/FAN are for prohibiting/permitting panel-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjust command is valid.	Mask indications will be forcibly turned off.
[FAN]	During FAY	Adjust command is invalid.	

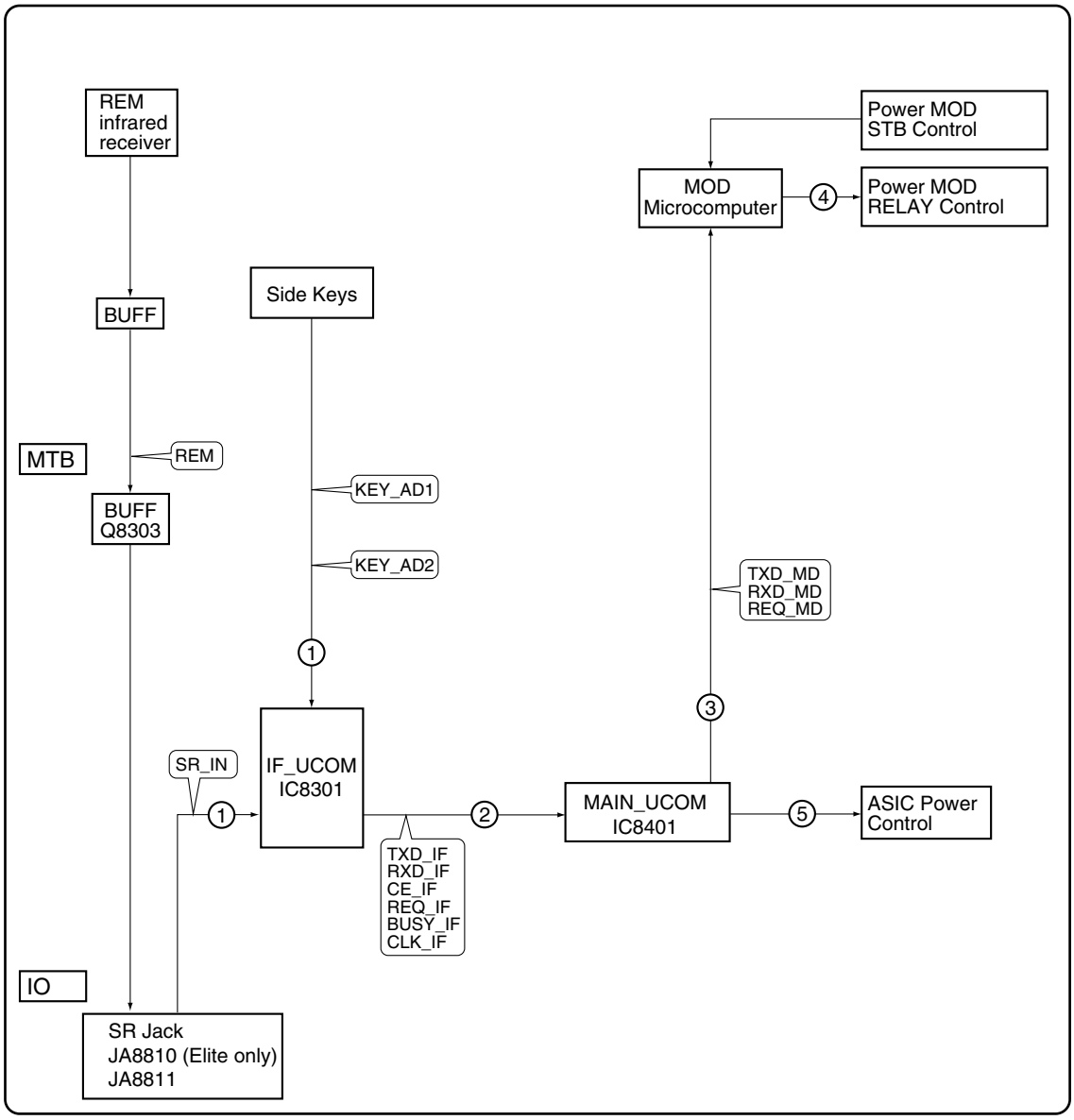
■ Backup function for adjustment values for the main unit • • • [FAJ/UAJ/CBU/BCP]

When the DIGITAL Assy is to be replaced, adjustment values can be copied from the backup EEPROM to the EEPROM of the Assy for service.

Command Format	Operation			Remarks
	Effective Operation Modes	Control		
[FAJ]	During FAY	To make the flag setting that indicating that adjustment of the panel unit has been completed	Writing 00 to the 4 k byte ROM and copying to the 2 k byte ROM	This takes at least 350 ms.
[UAJ]		To make the flag setting that indicating that adjustment of the main unit has not been completed	Writing F0 to the 4 k byte ROM	
[CBU]		To make the flag setting that indicating that backup data have not been copied	Writing F0 to the 2 k byte ROM	The backup ROM is initialized.
[BCP]		To copy Digital backup data to EEPROM	Copying backup data	

10. GENERAL INFORMATION

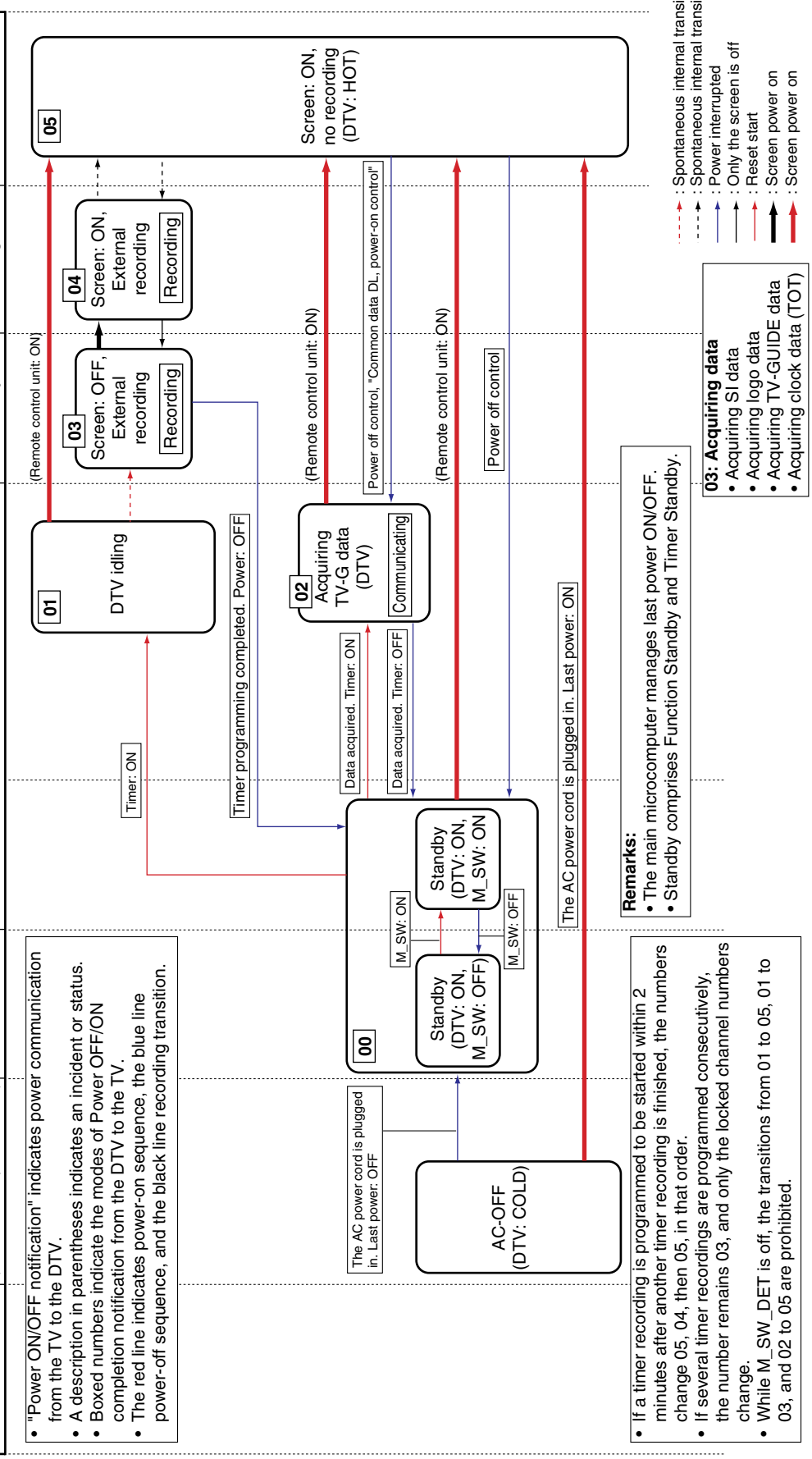
10.1 POWER ON SEQUENCE



① : The remote control (or KEY) signal is input to the IF microcomputer.
② : The IF microcomputer sends the operation data to the main microcomputer.
③ : The main microcomputer issues a startup command (PON) to the MOD microcomputer.
④ : The MOD microcomputer controls the relay of the power MOD of the PDP to startup the power of the PDP.
⑤ : The main microcomputer controls the ASIC power within the MTB to startup the power of the MTB.

10.2 POWER SUPPLY TRANSITION STATUS

	AC-OFF (AC power cord unplugged)	DTV Active (M_SW: OFF)	DTV Active (M_SW: ON)				Fully Active
Power LED	OFF	OFF	Standby (red LED)				Power ON (blue LED)
PDP	OFF	OFF	OFF	OFF	OFF		ON (PDP indication)
PSW1	OFF	OFF	OFF		OFF		ON (VDEC & ASIC ON)
Power control	OFF	OFF (POF)	OFF (POF)		OFF (POF)		PON (DTV+AV_ON)
Main microcomputer	OFF	ON	ON			ON (main microcomputer ON)	
IF microcomputer	OFF	ON	ON			ON (IF microcomputer ON)	
DTV	(Power interrupted: COLD)		WARM		External recording: WARM	Recording: HOT	HOT

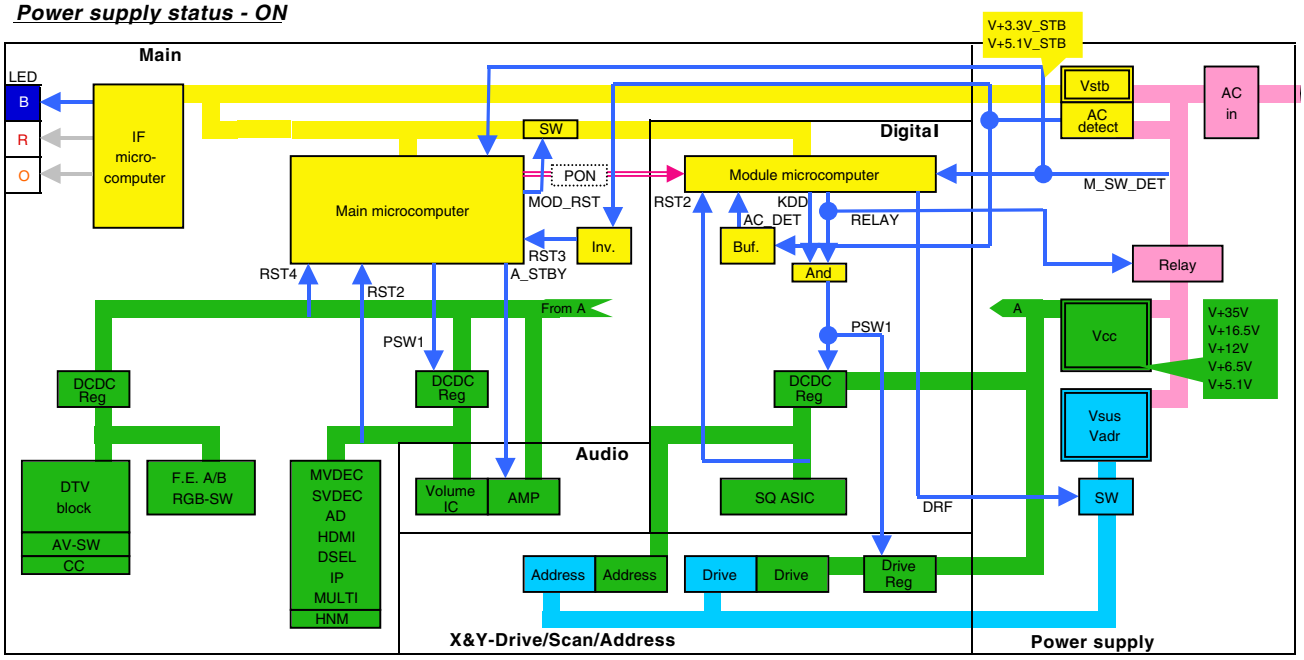


- "Power ON/OFF notification" indicates power communication from the TV to the DTV.
- A description in parentheses indicates an incident or status.
- Boxed numbers indicate the modes of Power OFF/ON completion notification from the DTV to the TV.
- The red line indicates power-on sequence, the blue line power-off sequence, and the black line recording transition.

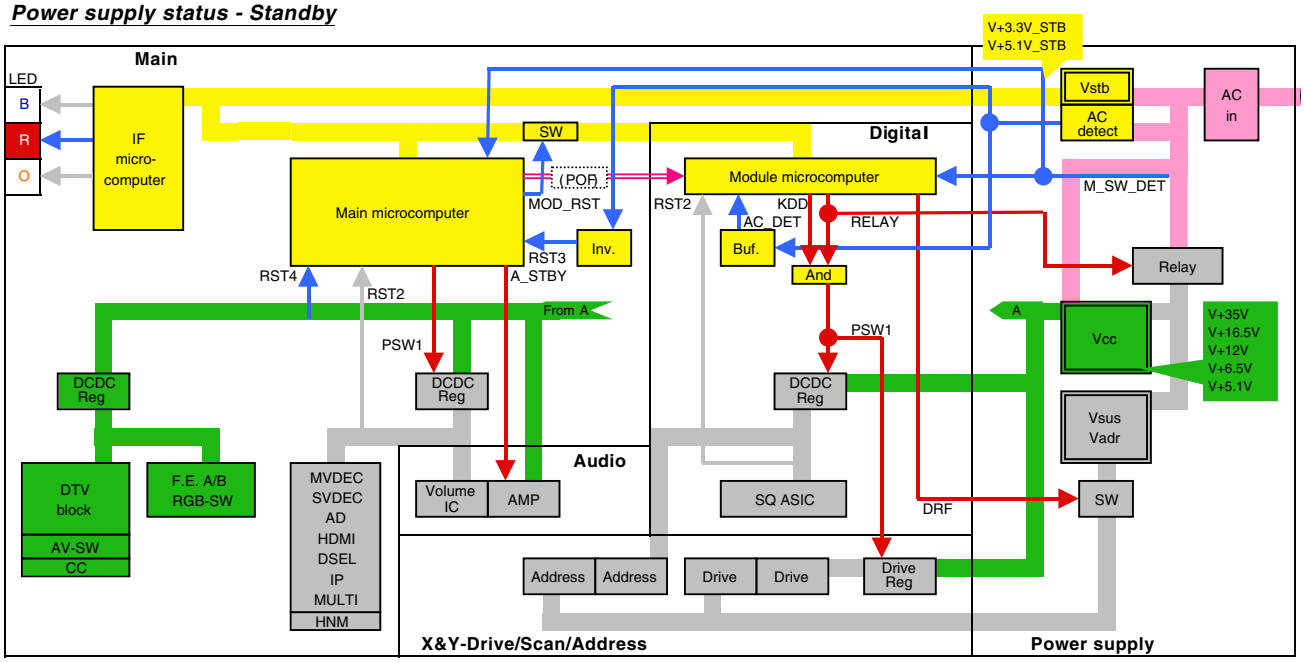
Remarks:
- The main microcomputer manages last power ON/OFF.
- Standby comprises Function Standby and Timer Standby.

- If a timer recording is programmed to be started within 2 minutes after another timer recording is finished, the numbers change 05, 04, then 05, in that order.
- If several timer recordings are programmed consecutively, the number remains 03, and only the locked channel numbers change.
- While M_SW_DET is off, the transitions from 01 to 05, 01 to 03, and 02 to 05 are prohibited.

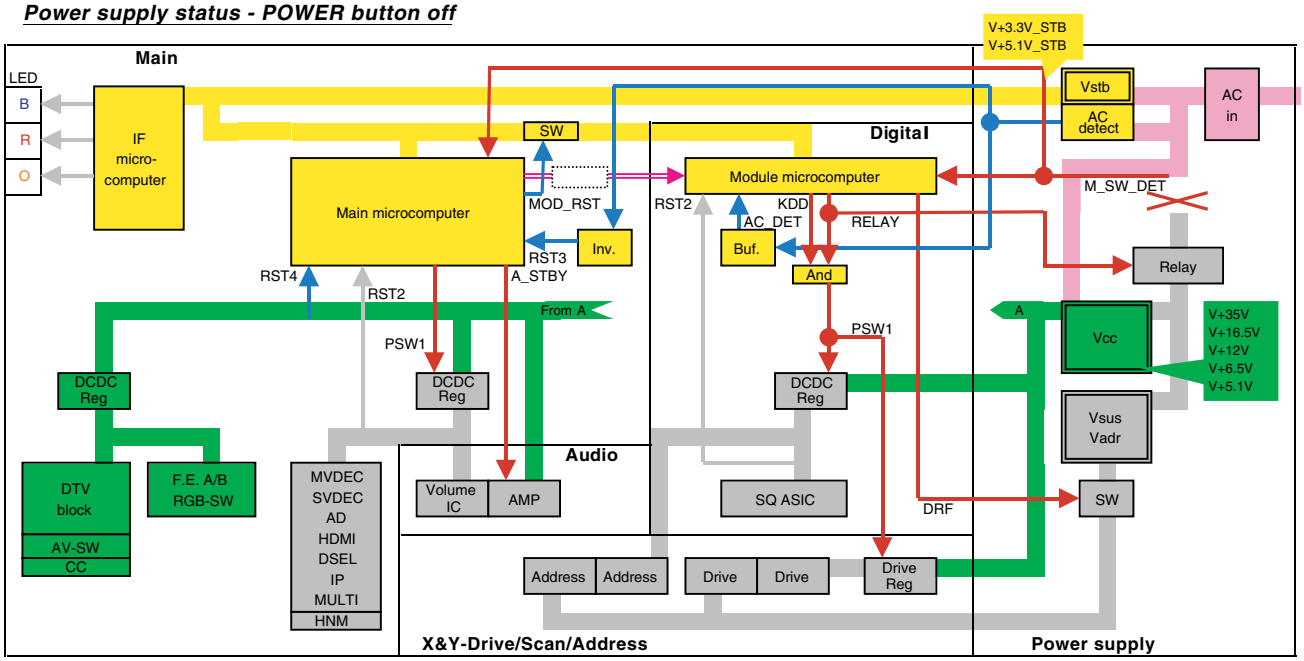
Power supply status - ON



Power supply status - Standby

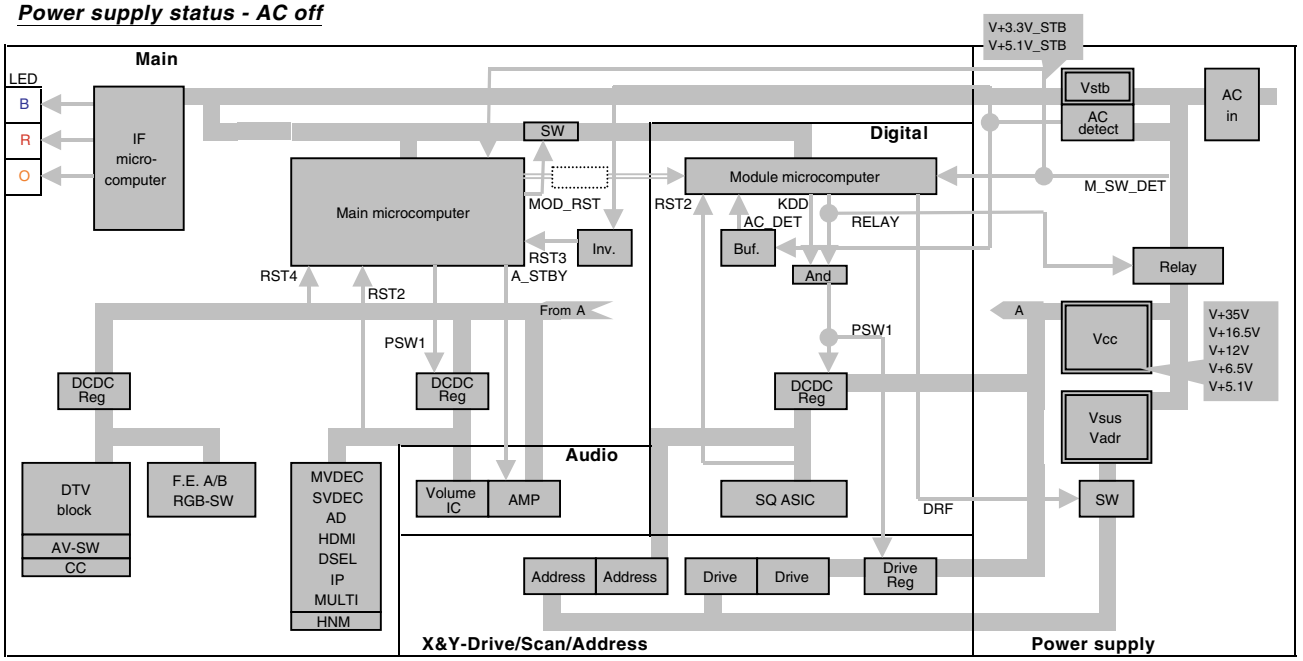


Power supply status - POWER button off



This state of the power supply is the same as the Standby mode.
However, all LED is turned off, and the operation by the user is not effective.

Power supply status - AC off



10.3 POWER ON/OFF FUNCTION FOR THE LARGE-SIGNAL SYSTEM

Function: It is an operational mode where the digital signal processing performs circuit operation but the power is not supplied to the panel driving system (large signal system) in order to avoid a power down.

Application:

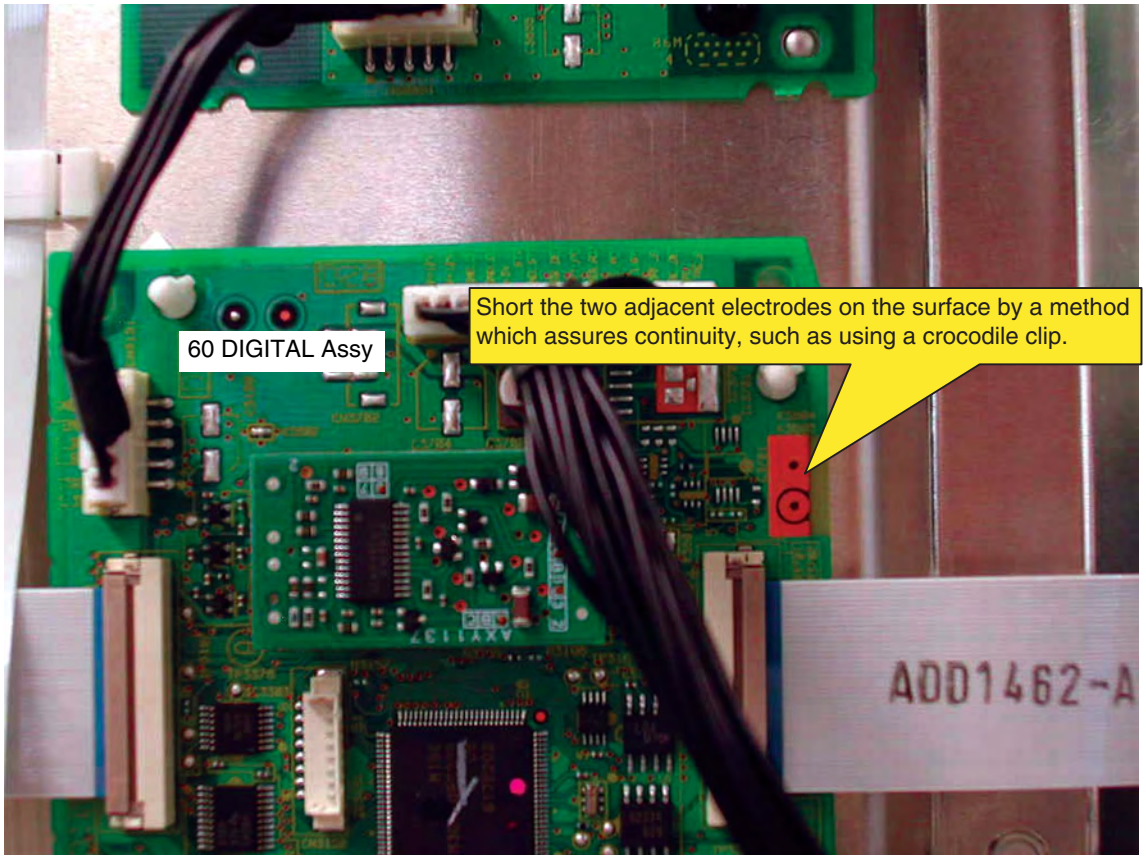
1. When it is necessary to check whether the signal output is correctly reaching the drive system in a repairing activity etc.
2. In the case of a PD, to determine whether the problem is with the large signal system power supply or with the small signal system power supply.

Method:

1. Make shorting between the specified location (refer to the illustration below) of the PCB surface of the DIGITAL ASSY and the nearby pattern.
2. Execute [DRV S00] by RS232C command. ([DRV S01] for release)

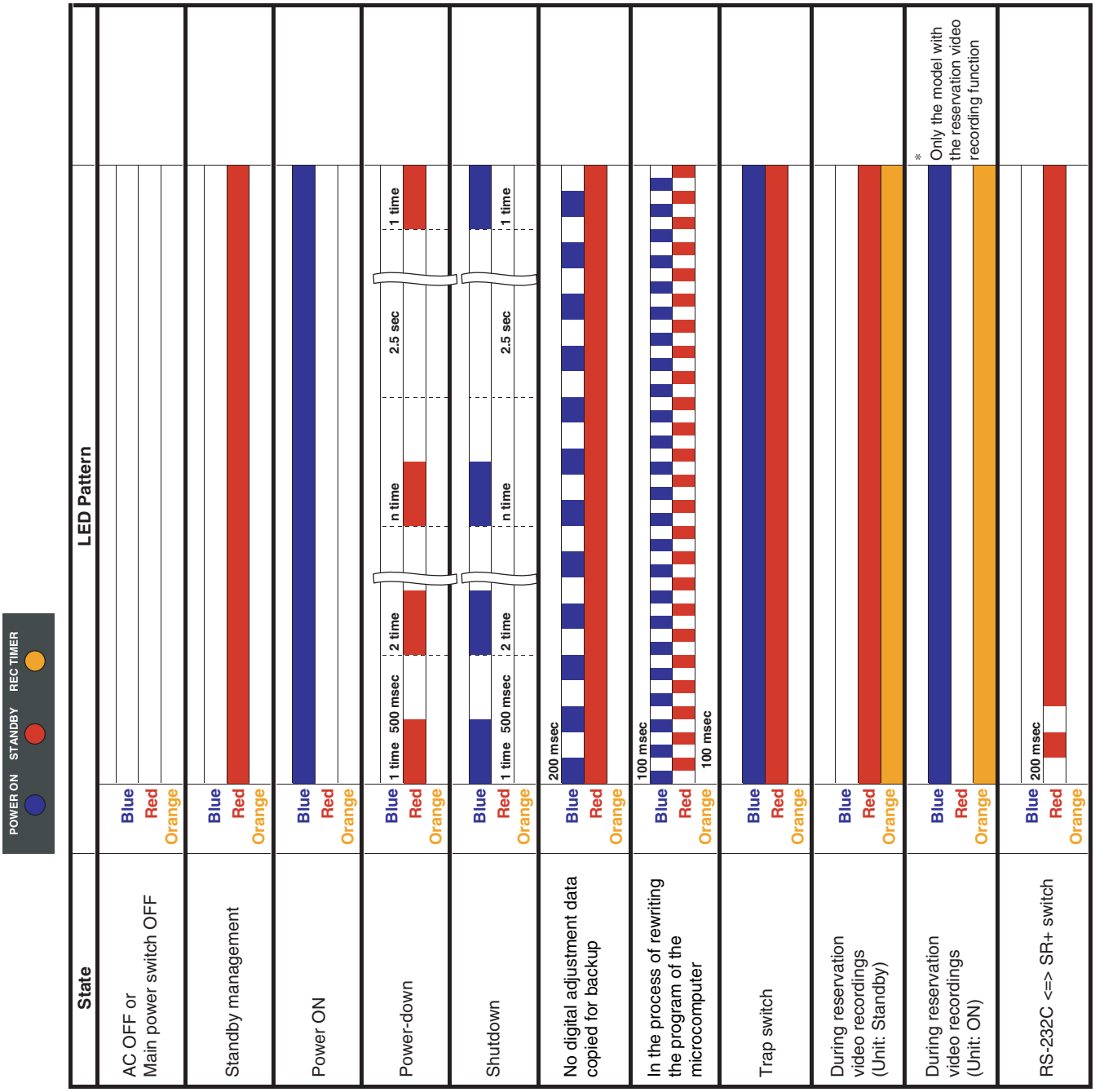
Supplemental explanation:

- When the large signal system power supply is in OFF state, there will be no PD, except PS_PD, as the PD signal has been muted.
- If the clip is removed in the OFF state of the large signal system power supply, PD will take place at the instance of clip removal. Therefore, be sure to remove the clip after turning the power OFF.
- Under RS232C command control, [DRVS01] (release) is possible during power ON. However, there is a possibility of damaging the set. Therefore, make this operation only after turning the power OFF.
- Command [DRVS00/S01] is effective even during standby. When the main power is turned OFF, however, [DRVS01] (release) will be effective.


60 DIGITAL Assy
Short the two adjacent electrodes on the surface by a method which assures continuity, such as using a crocodile clip.
ADD1462-A

10.4 LED INFORMATION

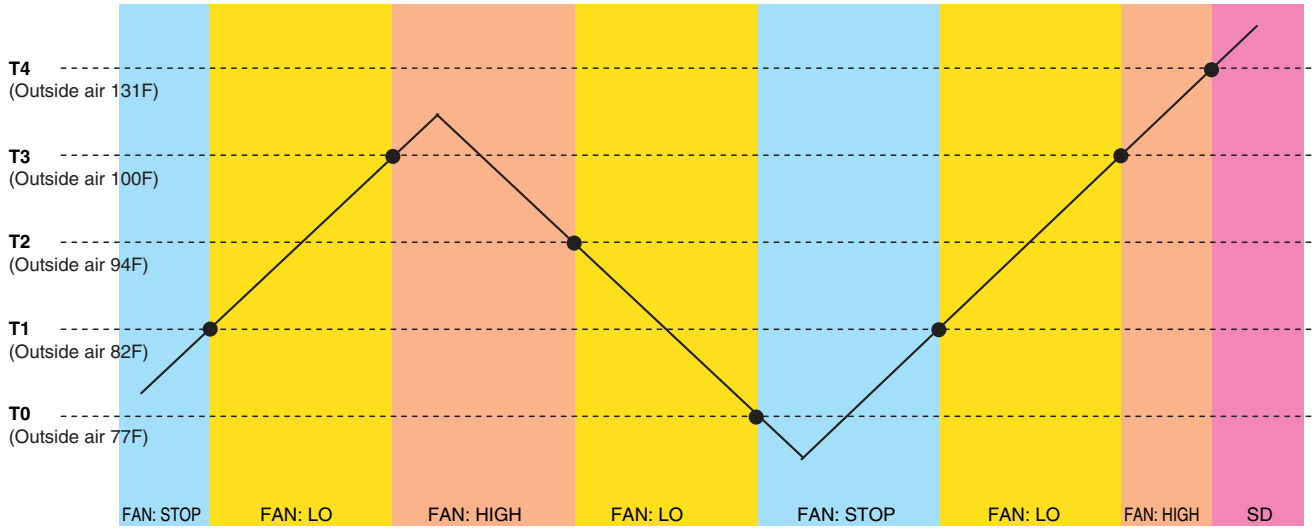
LED Pattern



10.5 SPECIFICATION ABOUT THE THERMAL PROTECTION

* The change of HI / LO have hysterisis curve below.

Reading Value of The Sensor and FAN Drive.



Assign			AD Value 10bit	AD Value 8bit	Sensor Temp.	Aims (Outside Air)	
Pin 76	TEMP2	T4 setting	424	106	268F	131F	SD
		T3 setting	566	142	104F	100F	Low → High
		T2 setting	601	150	97F	94F	High → Low
		T1 setting	653	163	86F	82F	STOP → Low
		T0 setting	679	170	80F	77F	Low → STOP

Operation when executing FAN control command

When executing [FCNS00], [FCNS01], [FCNS02] command, detect the FAN_NG signal. When NG is detected, it becomes shutdown. When [FCNS03] command is executed, FAN_NG detection is not operated.

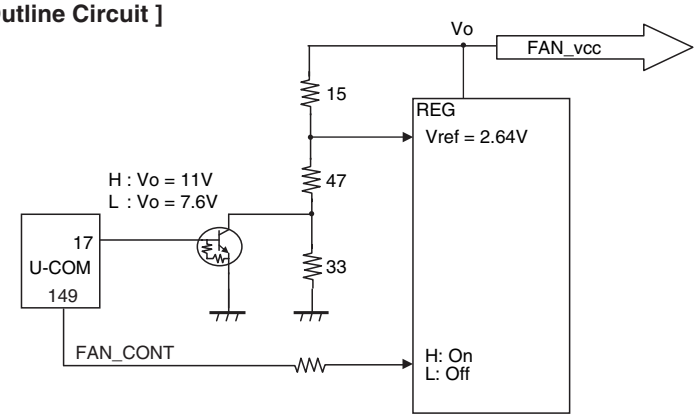
Assign	FAN: HIGH	FAN: LO	OFF
Pin 149 (FAN_CONT)	H	H	L
Pin 17 (FAN_CONT_POW)	H	L	–

This model control the FAN drive by pin 149 (FAN ON / OFF) and pin 17 (Change of FAN control voltage) of MAIN U-com.

Set State and FAN Drive

Power	PSW1	State	Control	Fan Operation
ON OFF	ON	ON STB	According to the reading value of above table sensor. FAN_CONT: "L"	HIGH or LO OFF

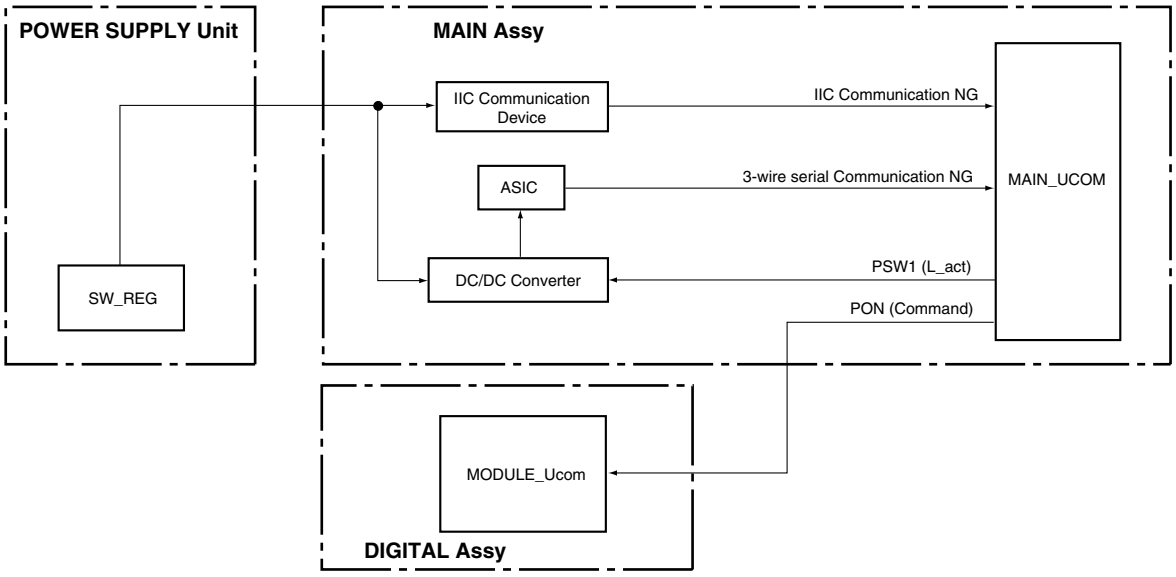
[Outline Circuit]



10.6 PROCESSING IN ABNORMALITY

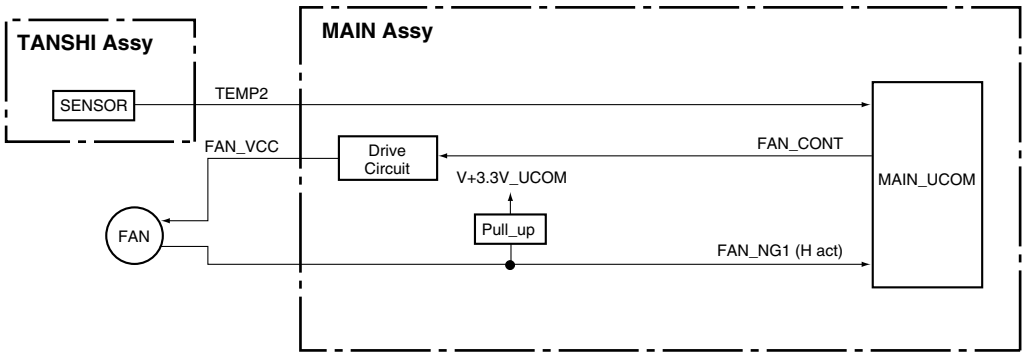
Power supply and DC-DC converter

● **Circuit diagram**



Fan and temperature sensor

● **Circuit diagram**

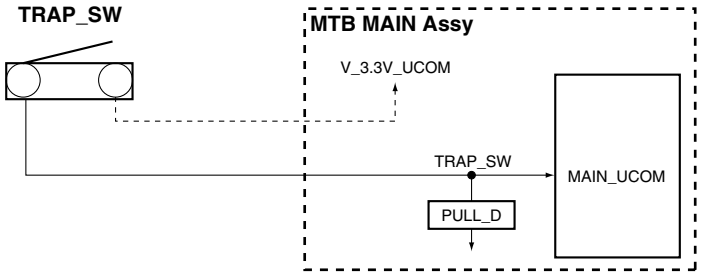


● **Specifications for port monitoring**

Port Name	SD/PD Indication	Assigned Pin	Active
FAN_NG 1	FAN	155	Shutdown with H
TEMP2	Abnormally high temperature in the MR	76	Shutdown when the value exceeds the predetermined value

TRAP_SW

● **Circuit diagram**

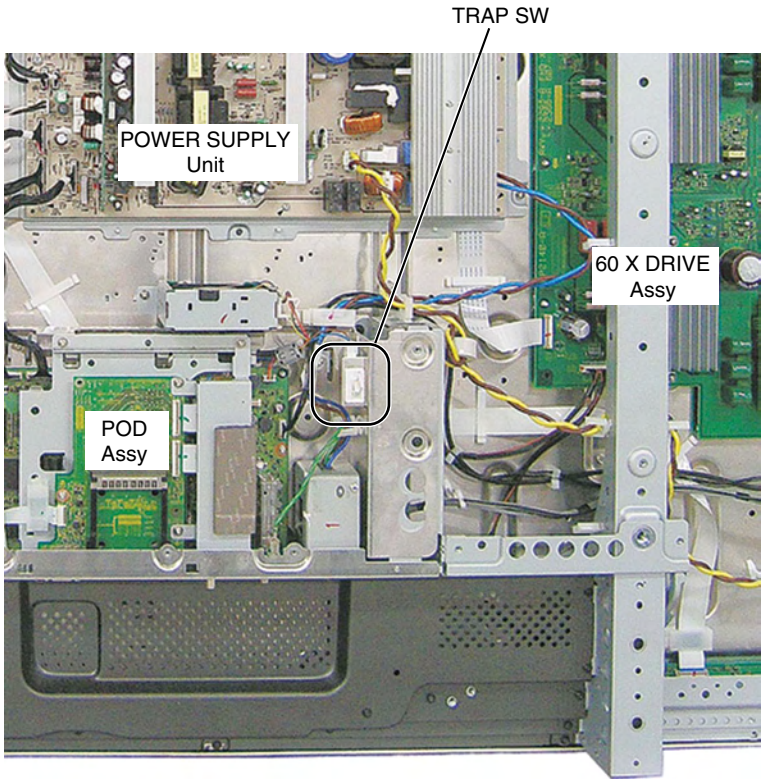


10.7 TRAP SW

● Outline and Notes

For video data transmission inside this Plasma Display, digital signals are used. Therefore, this unit adopts the HDCP (High-bandwidth Digital Content Protection) system for copyright protection. This unit is also provided with a detection switch (TRAP switch) that will prohibit the unit from being turned on again "if the upper plate of the unit is accidentally opened," in order to prevent the panel technology from being leaked out.

The TRAP switch is disabled while the unit is turned off.
When performing internal diagnosis of the PDP, fix the switch to the OFF position using adhesive tape before turning on the unit. After servicing, be sure to remove the adhesive tape.



WHEN THE TRAP SW WORKS
Just in case the TRAP SW works, the red and green LEDs may be lighting. After closing the bonnet or dealing with the TRAP SW on ahead, carry out following procedure from this state.

■ **Cancelling by the remote control**
- Enter to the Factory mode.
- Then, proceed to INITIALIZE layer inside the Factory mode, and then press "DISPLAY" key for more than 5 seconds.

11. SPECIFICATIONS

11.1 MAIN SPECIFICATIONS

Specifications

Item			60" Plasma Display Model: PDP-6072HD/PDP-6071HD/ PDP-6070HD
Number of pixels			1365 x 768 pixels
Audio Amplifier			13 W + 13 W (1 kHz, 10 %, 8 Ω)
Speakers			–
Surround System			SRS/FOCUS/TruBass
Power Requirement			120 V AC, 60 Hz, 455 W (30 W Standby)
Weight			Main unit: 51.5 kg (113.6 lbs.)
Reception System (Digital)			ATSC Digital TV system
	Circuit type		8VSB/64QAM/256QAM/QPSK demodulation
	Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
		CATV	Ch. 2 to 135
	Audio format		Dolby Digital
Reception System (Analog)			American TV standard NTSC system
	Circuit type		Video signal detection PLL full synchronous detection, PLL digital Synthesizer system
	Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
		CATV	ANT/CABLE A IN Ch. 1 to 135 ANT B IN Ch. 1 to 125
	Audio multiplex		BTSC system
Terminals	Rear	ANT/CABLE A IN	75 Ω UNBAL, F Type for DTV/VHF/UHF/CATV in
		ANT B IN	75 Ω UNBAL, F Type for VHF/UHF/CATV in Loop out
		INPUT 1	S-VIDEO in, VIDEO in, AUDIO in
		INPUT 2	COMPONENT VIDEO in, S-VIDEO in, VIDEO in, AUDIO in
		INPUT 3	COMPONENT VIDEO in, AUDIO in
		PC	Analog RGB in, AUDIO in
		INPUT 5	HDMI in*, AUDIO in
		INPUT 6	HDMI in*, AUDIO in
		MONITOR OUT	VIDEO out, AUDIO out
		Digital Audio Output	Optical
		G-LINK	1
		CONTROL OUT	1
		SPEAKER	8 Ω to 16 Ω
		SUB WOOFER OUTPUT	Variable
		CableCARD	Point of Deployment
	Side	INPUT 4	COMPONENT VIDEO in, VIDEO in, AUDIO in
		USB	USB in**
On-screen display languages			English/French/Spanish

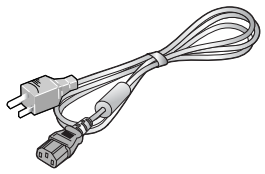
* This conforms to HDMI1.1 and HDCP1.1.
HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable.
HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

** This conforms to USB 1.1 and 2.0 .

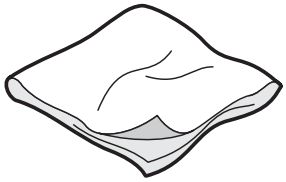
Design and specifications are subject to change without notice.

11.2 ACCESSORIES

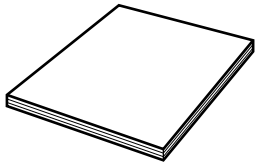
Supplied Accessories



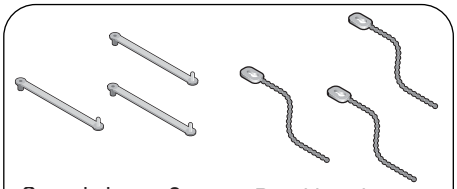
Power cord (2 m/6.6 feet)
(ADG1215)



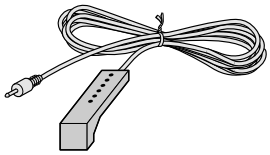
Cleaning cloth
(AED1285)



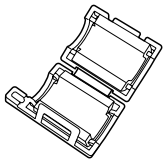
Operating instructions
(ARE1426)



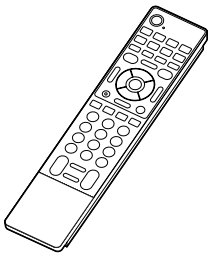
Speed clamp 3 Bead band 3
Binder Assy (AEC1908)



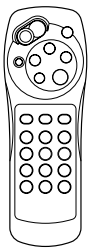
G-LINK cable (3 m/9.8 feet)
(VDX1010)



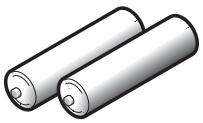
Ferrite core
(CTX1054)



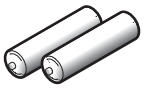
Remote control unit
(AXD1536)



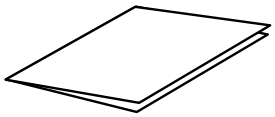
Simplified remote control unit*
(for PDP-6071HD only) (AXD1539)



AA size battery x 2
(Alkaline battery for
remote control unit)



AAA size battery x 2
(Manganese battery for simplified
remote control unit)
(for PDP-6071HD only)



Warranty card

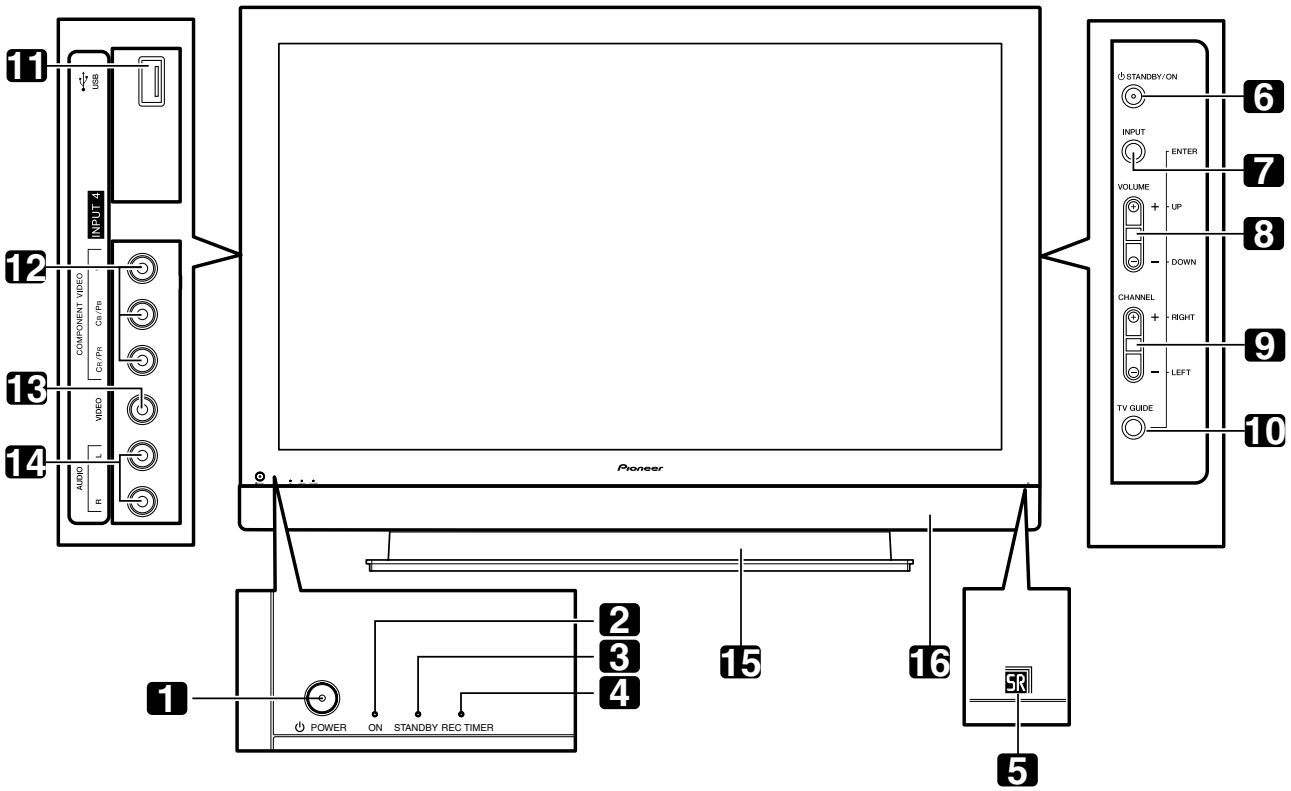
Terminal position sheet
(for use when mounting the Plasma Display on the wall)
(AAX3330)

* Buttons used for only basic operations are provided on the simplified remote control unit. You can use it as necessary.

11.3 PANEL FACILITIES

Plasma Display

Front/side view
(PDP-6072HD/PDP-6071HD/PDP-6070HD)



1 ⏻ **POWER** button

2 POWER ON indicator

3 STANDBY indicator

4 REC TIMER indicator

5 Remote control sensor

(Side view)

6 **STANDBY/ON** button

7 **INPUT** button (**ENTER** button*)

8 **VOLUME UP/DOWN** buttons (**UP/DOWN** buttons*)

9 **CHANNEL UP/DOWN** buttons (**LEFT/RIGHT** buttons*)

10 **TV GUIDE** button*

11 USB port

12 INPUT 4 terminals (COMPONENT VIDEO: Y, C_B/P_B, C_R/P_R)

13 INPUT 4 terminal (VIDEO)

14 INPUT 4 terminals (AUDIO)

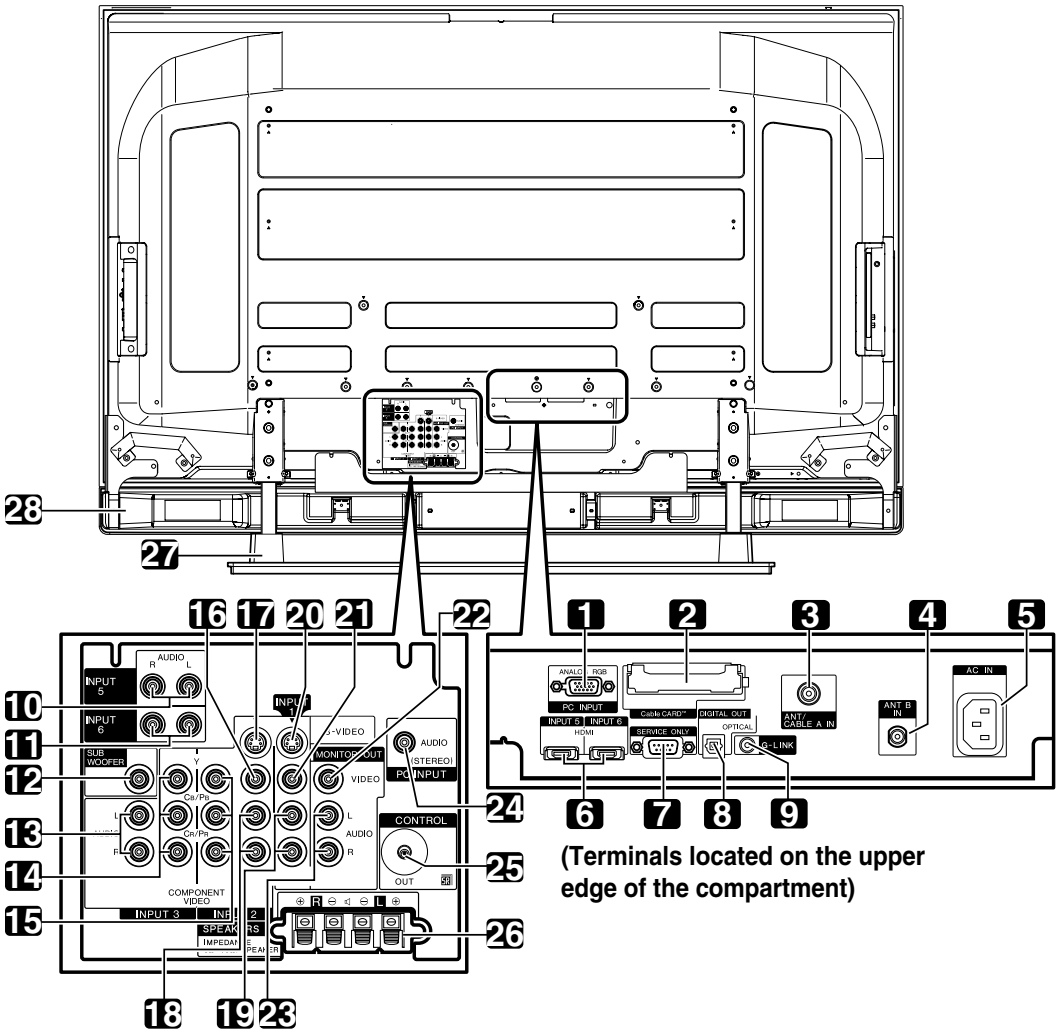
15 Stand: PDK-TS15 for the PDP-6072HD
PDK-TS15U for the PDP-6071HD/PDP-6070HD

16 Speaker: PDP-S41

For details, refer to the operation manual that came with the stand or speaker.

The buttons with asterisks (*) can operate the TV Guide On Screen™ system.

Rear view
(PDP-6072HD/PDP-6071HD/PDP-6070HD)

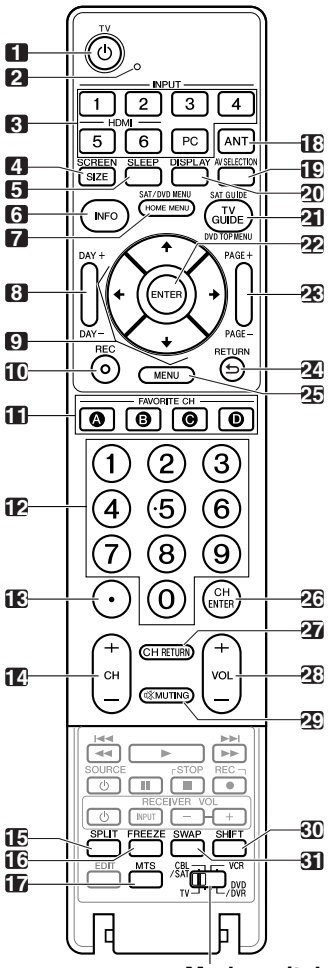


(Terminals located on the upper edge of the compartment)

1 PC INPUT terminal (ANALOG RGB)
2 CableCARD™ slot
3 ANT/CABLE A IN terminal
4 ANT B IN terminal
5 AC IN terminal
6 HDMI terminals (INPUT 5/INPUT 6)
7 RS-232C terminal (used for factory setup)
8 DIGITAL OUT terminal (OPTICAL)
9 G-LINK terminal
10 INPUT 5 terminals (AUDIO)
11 INPUT 6 terminals (AUDIO)
12 SUB WOOFER terminal
13 INPUT 3 terminals (AUDIO)
14 INPUT 3 terminals (COMPONENT VIDEO: Y, C_B/P_B, C_R/P_R)
15 INPUT 2 terminals (COMPONENT VIDEO: Y, C_B/P_B, C_R/P_R)
16 INPUT 2 terminal (VIDEO)
17 INPUT 2 terminal (S-VIDEO)
18 INPUT 2 terminals (AUDIO)
19 INPUT 1 terminals (AUDIO)
20 INPUT 1 terminal (S-VIDEO)
21 INPUT 1 terminal (VIDEO)
22 MONITOR OUT terminal (VIDEO)
23 MONITOR OUT terminals (AUDIO)
24 PC INPUT terminal (AUDIO)
25 CONTROL OUT terminal
26 SPEAKER (R/L) terminals
27 Stand: PDK-TS15 for the PDP-6072HD
PDK-TS15U for the PDP-6071HD/ PDP-6070HD
28 Speaker: PDP-S41
For details, refer to the operation manual that came with the stand or speaker.

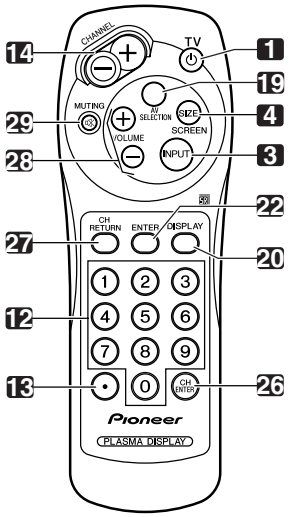
Remote control unit

This section describes the functions of the buttons available when the mode switch has been set to TV. For the buttons for controlling other equipment, see "Using the remote control unit to control other devices".



Mode switch (with "TV" selected)

Simplified remote control unit (PDP-6071HD only)



1 **TV** : Turns on the power to the Plasma Display System or places it into standby mode.
2 Transmission confirmation LED
3 **INPUT**: Selects an input source of the Plasma Display System. (INPUT 1, INPUT 2, INPUT 3, INPUT 4, INPUT 5, INPUT 6 and PC) (With the simplified remote control unit, **INPUT** toggles between ANT-A, ANT-B, INPUT 1, INPUT 2, INPUT 3, INPUT 4, INPUT 5, INPUT 6 and PC.)
4 **SCREEN SIZE**: Selects the screen size.
5 **SLEEP**: Sets the sleep timer.
6 **INFO**: Displays a channel banner when a TV program is being watched.
When the TV Guide On Screen™ system is in operation, displays information about the currently highlighted channel (if available).
7 **HOMEMENU**: Displays the Home Menu screen.
8 **DAY +/–**: Jumps to the next or previous day of program listings in the TV Guide On Screen™ Listing service.
9 ↑/↓/←/→ :Selectsadesireditemonthemenuscreen.
10 **REC**: When using the TV Guide On Screen™ System, starts recording with a connected VCR.
11 **FAVORITE CH (A, B, C, D)**:
Selects any of the four preset channels.
While watching, you can toggle the set channels by pressing **A**, **B**, **C** and **D**.
12 **0 – 9**: Selects the channel.
13 **•(dot)**: Enters a dot.
14 **CH +/–** : Selects the channel.
15 **SPLIT**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
16 **FREEZE**: Freezes a frame from a moving image. Press again to cancel the function.
17 **MTS**: Selects MTS/SAP or language depending on the program being watched.
18 **ANT**: Selects the antenna (A, B).
19 **AV SELECTION**: Selects audio and video settings. (AV mode: STANDARD, DYNAMIC, MOVIE, GAME, USER. PC mode: STANDARD, USER.)
20 **DISPLAY**: Displays the channel information.
21 **TV GUIDE**: Displays the TV Guide On Screenô system.
22 **ENTER**: Executes a command.
23 **PAGE +/–** (for the TV Guide On Screen™ system): Scrolls the program listing screen vertically.
24 **RETURN**: Returns to the previous menu screen.
25 **MENU**: Displays a panel menu in the TV Guide On Screen™ system.
26 **CH ENTER**: Executes a channel number.
27 **CH RETURN**: Returns to the previous channel. This button is disabled while the TV Guide On Screen™ system is displayed.
28 **VOL +/–**: Sets the volume.
29 **MUTING**: Mutes the sound.
30 **SHIFT**: Moves the location of the small screen when in the picture-in-picture mode.
31 **SWAP**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

Luminous remote control buttons (main unit only)

All buttons on the main remote control unit are luminous and gather and store light. This enables quick access to the desired function when performing operations in dark places.

NOTE

When using the remote control unit, point it at the Plasma Display.

12. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

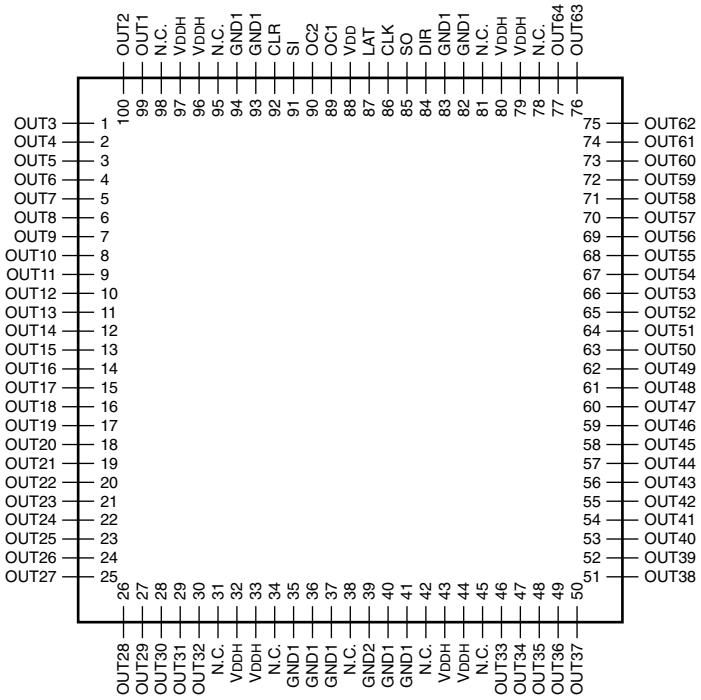
● **List of IC**

SN755870KPZT, BCM7038KPB1G-B2, R5520H001B, R2S11002AFT, R2S11001FT, UPD64015AGM-UEM, AD9985KSTZ-110, SII9023CTU

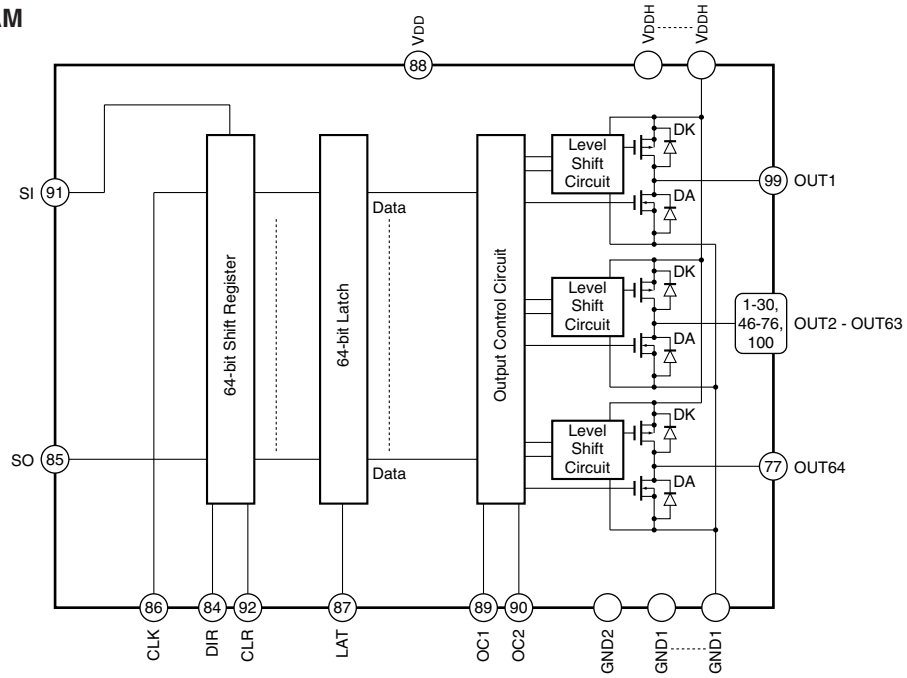
■ SN755870KPZT (607 SCAN A ASSY : IC2801 - IC2806) (607 SCAN B ASSY : IC2901 - IC2906)

• PLASMA DISPLAY PANEL IC

● PIN LAYOUT (Top View)



● BLOCK DIAGRAM



● PIN FUNNCTION

No.	Pin Name	I/O	Pin Function
1 - 30	OUT3 - OUT32	O	High-voltage push-pull output
31	N.C.	–	Not used
32 - 33	V_{DDH}	–	Power for High-voltage circuit
34	N.C.	–	Not used
35 - 37	GND1	–	GND
38	N.C.	–	Not used
39	GND2	–	GND
40 - 41	GND1	–	GND
42	N.C.	–	Not used
43 - 44	V_{DDH}	–	Power for High-voltage circuit
45	N.C.	–	Not used
46 - 77	OUT33 - OUT64	O	High-voltage push-pull output
78	N.C.	–	Not used
79 - 80	V_{DDH}	–	Power for High-voltage circuit
81	N.C.	–	Not used
82 - 83	GND1	–	GND
84	DIR	I	Setting the shift direction of shift-register L : reverse side shift (SO→SI), H : forward side shift (SI→SO)
85	SO	I/O	Serial data In/Out
86	CLK	I	Serial clock Input Down-side edge trigger
87	LAT	I	LAT data Input L : The data of shiftregister is transferred to ouput latch. H : The ouput data of latch is holded.
88	V_{DD}	–	Power for Logic circuit
89	OC1	I	Output control Output is controlled by truth table right side.
90	OC2	I	
91	SI	I/O	Serial data In/Out
92	CLR	I	All output reset CLR terminal : L → normal operation, CLR terminal : H→ All output "H"
93 - 94	GND1	–	GND
95	N.C.	–	Not used
96 - 97	V_{DDH}	–	Power for High-voltage circuit
98	N.C.	–	Not used
99 - 100	OUT1 - OUT2	O	High-voltage push-pull output

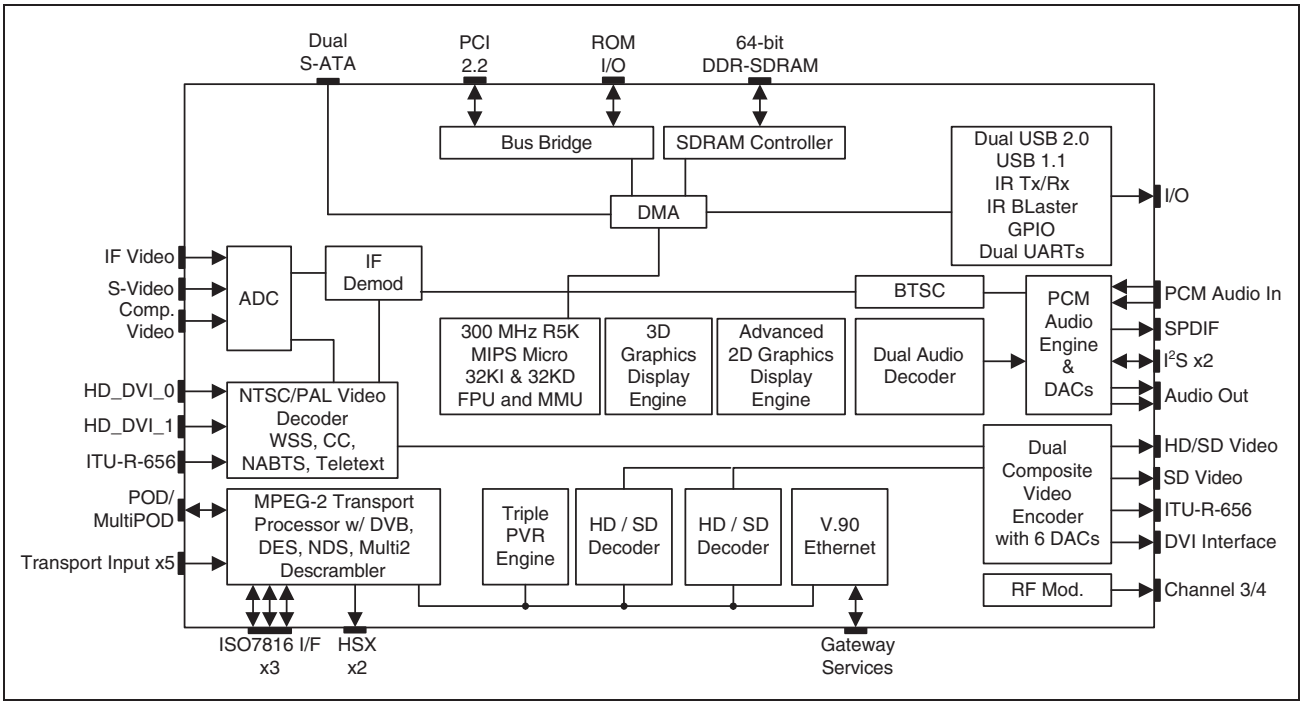
OC1	OC2	OUT
L	L	ALL Hi-Z
L	H	DATA
H	L	ALL L
H	H	ALL H

■ BCM7038KPB1G-B2 (MAIN ASSY : IC6201)

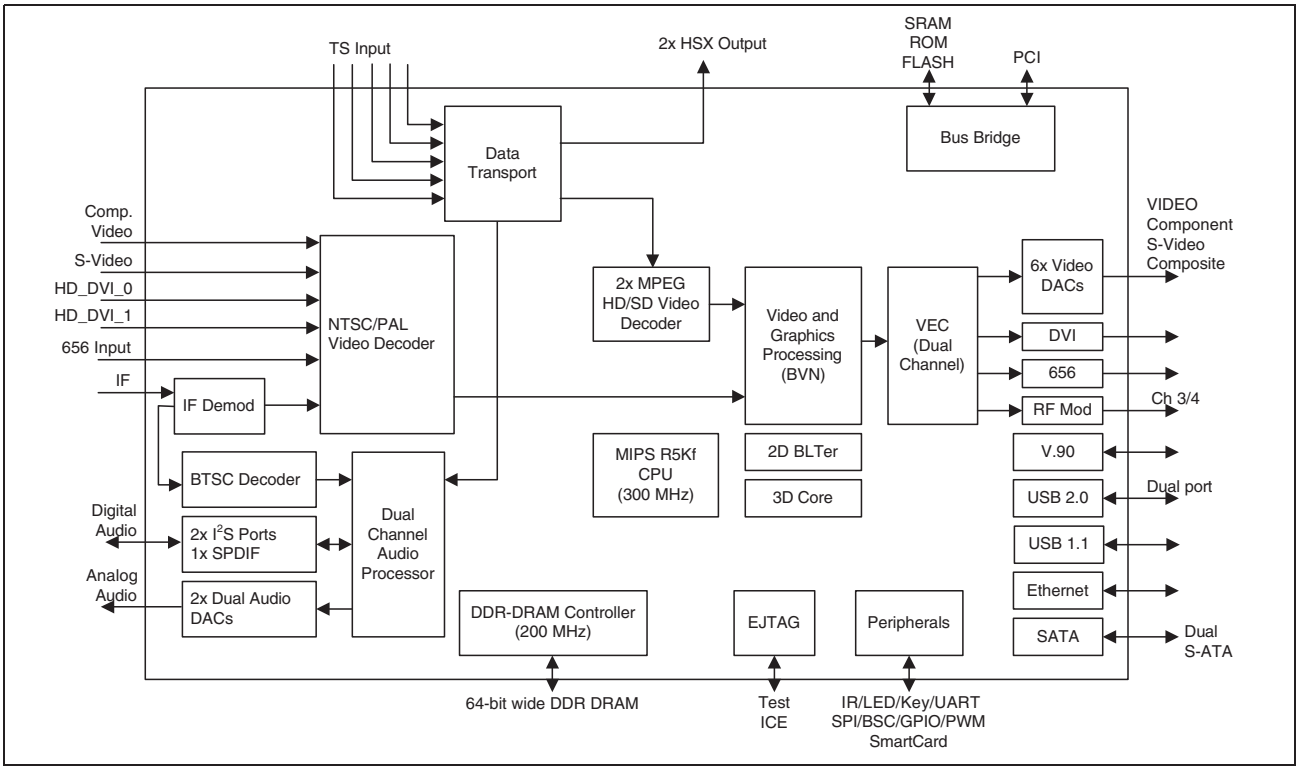
• System IC

● BLOCK DIAGRAM

[System Block Diagram]



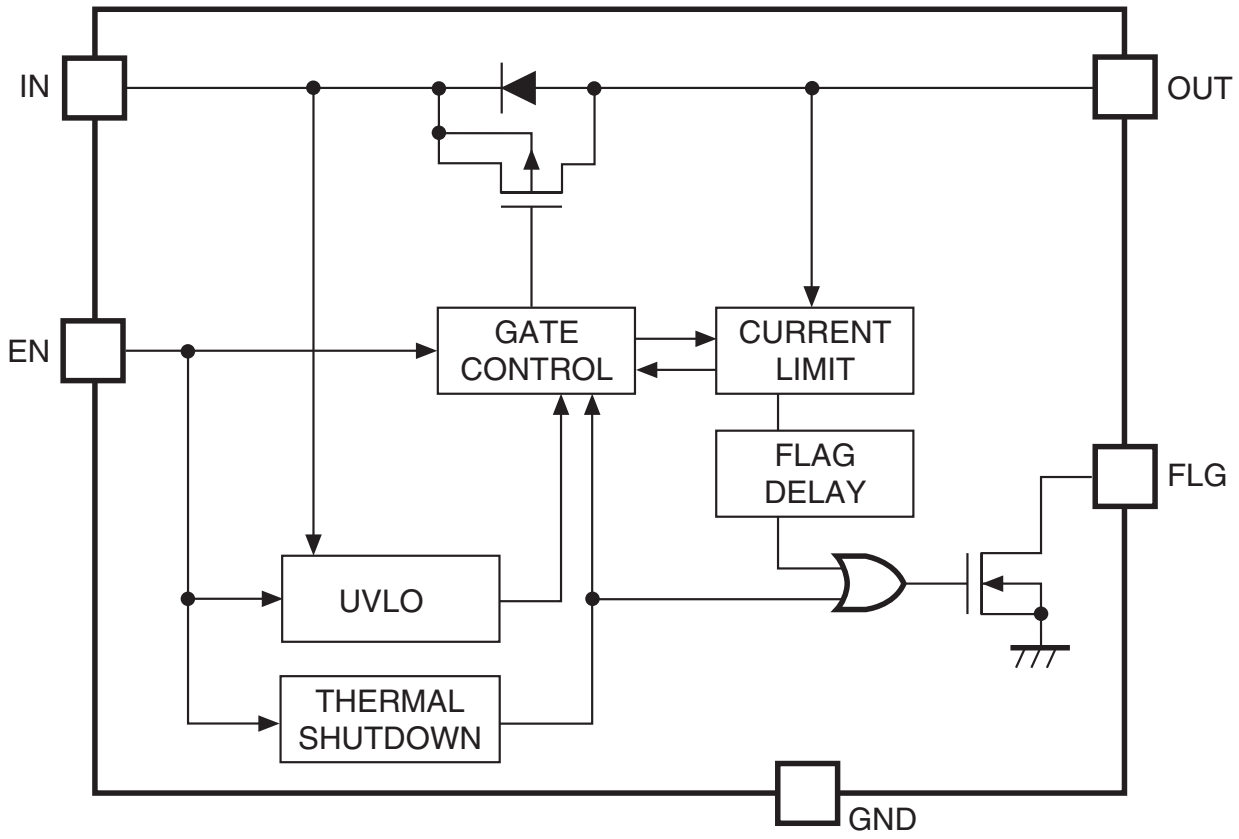
[Functional Block Diagram]



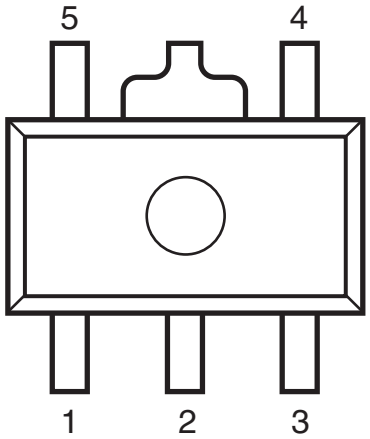
■ R5520H001B (MAIN ASSY : IC7105)

• USB HIGH-SIDE SW IC

● BLOCK DIAGRAM



● PIN LAYOUT



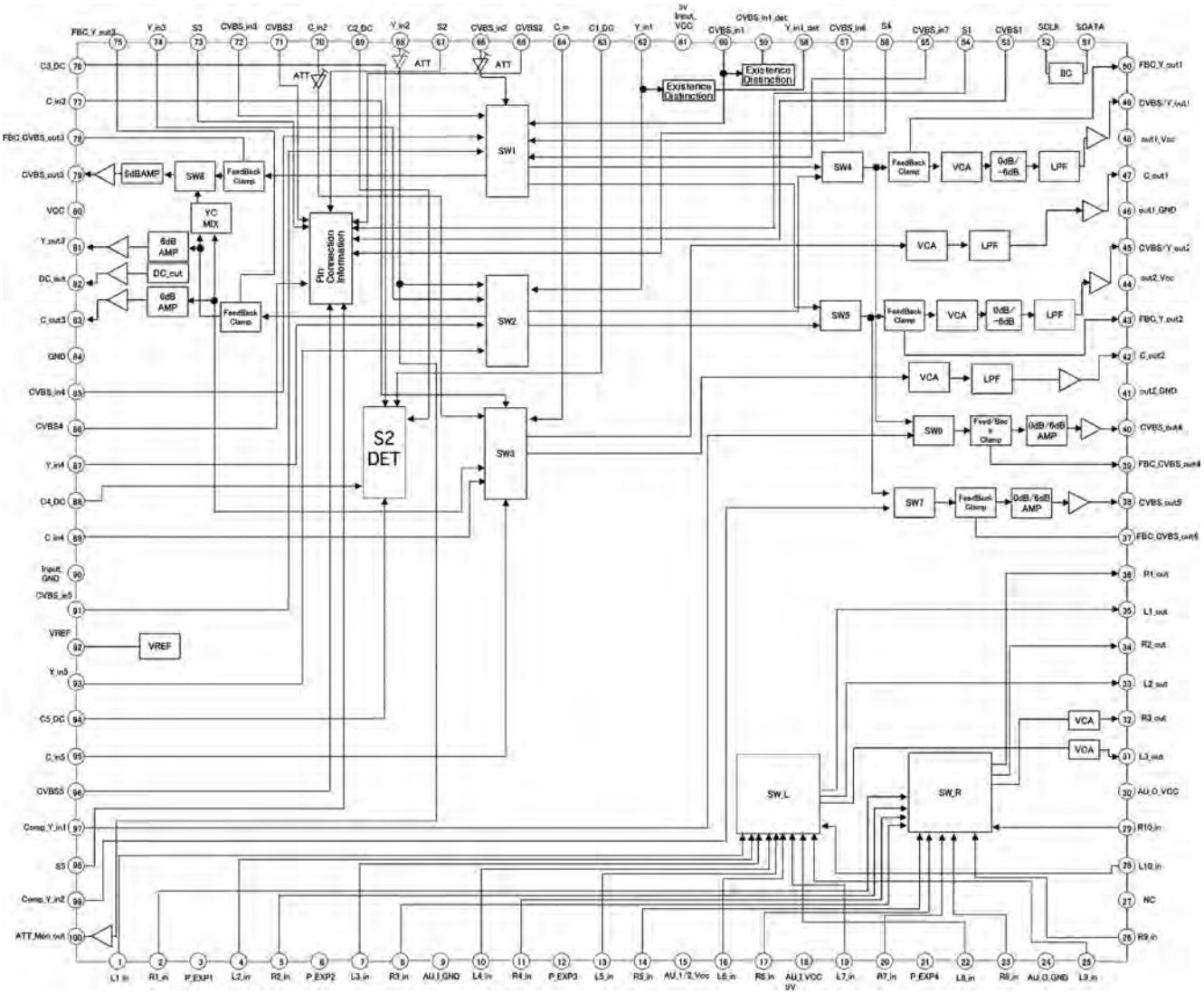
● PIN FUNCTION

Pin No.	Name	Function
1	EN	Enable terminal
2	GND	GND terminal
3	FLG	FLAG terminal (Open-drain output)
4	IN	Power input terminal
5	OUT	Output terminal

■ R2S11002AFT (MAIN ASSY: IC4701)

• AV SW

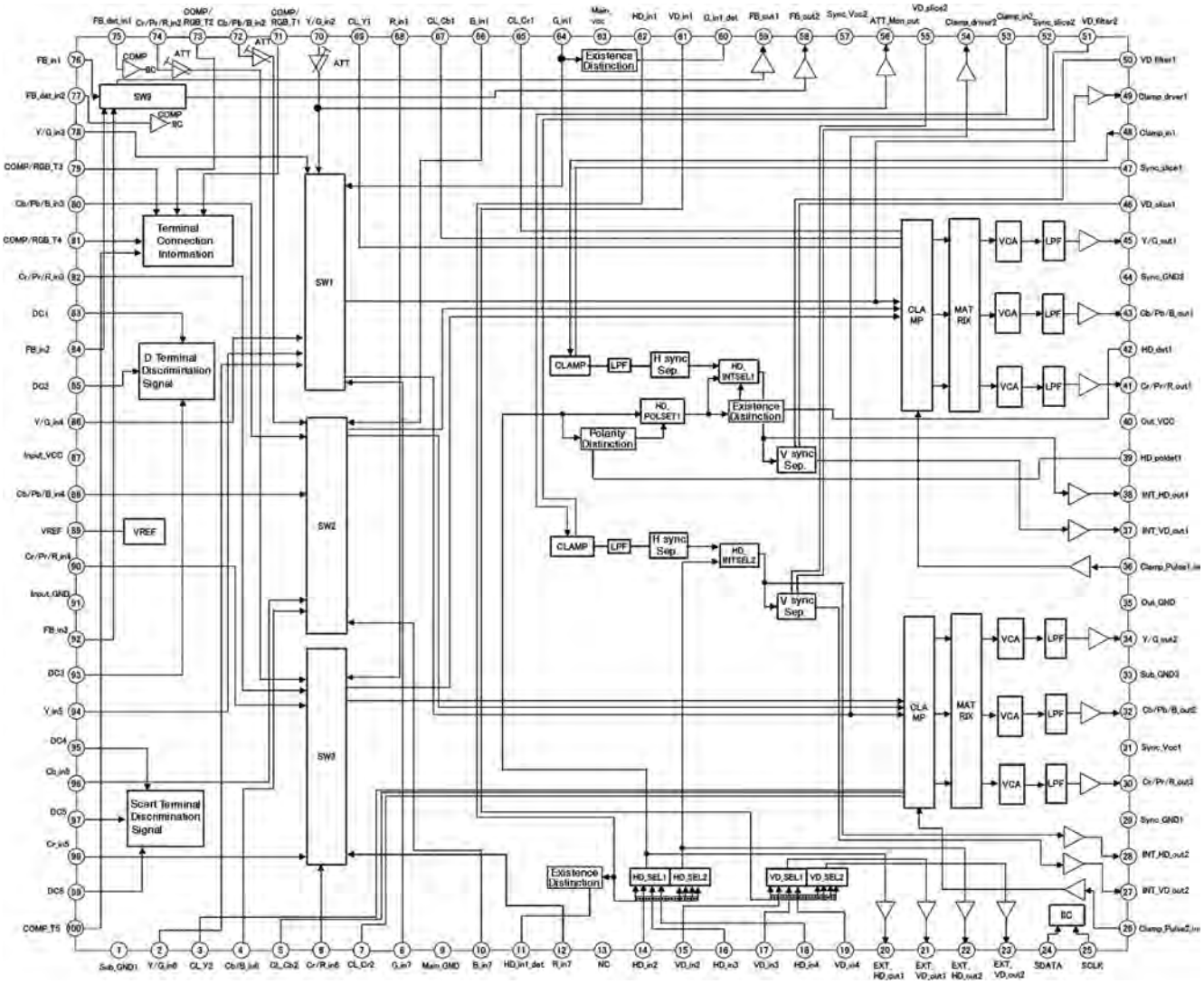
● Block Diagram



■ R2S11001FT (MAIN ASSY: IC4901)

• Component SW IC

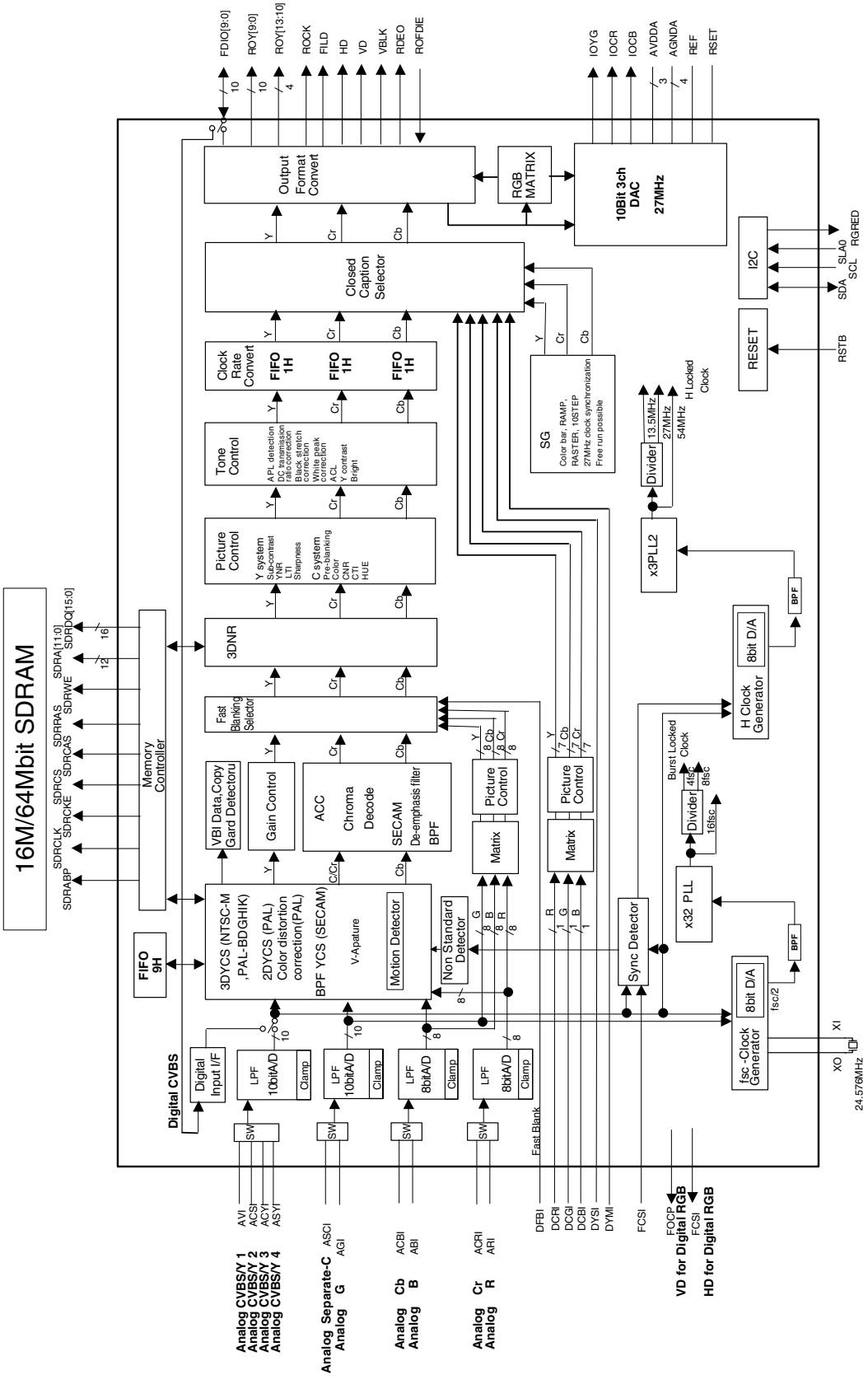
● Block Diagram



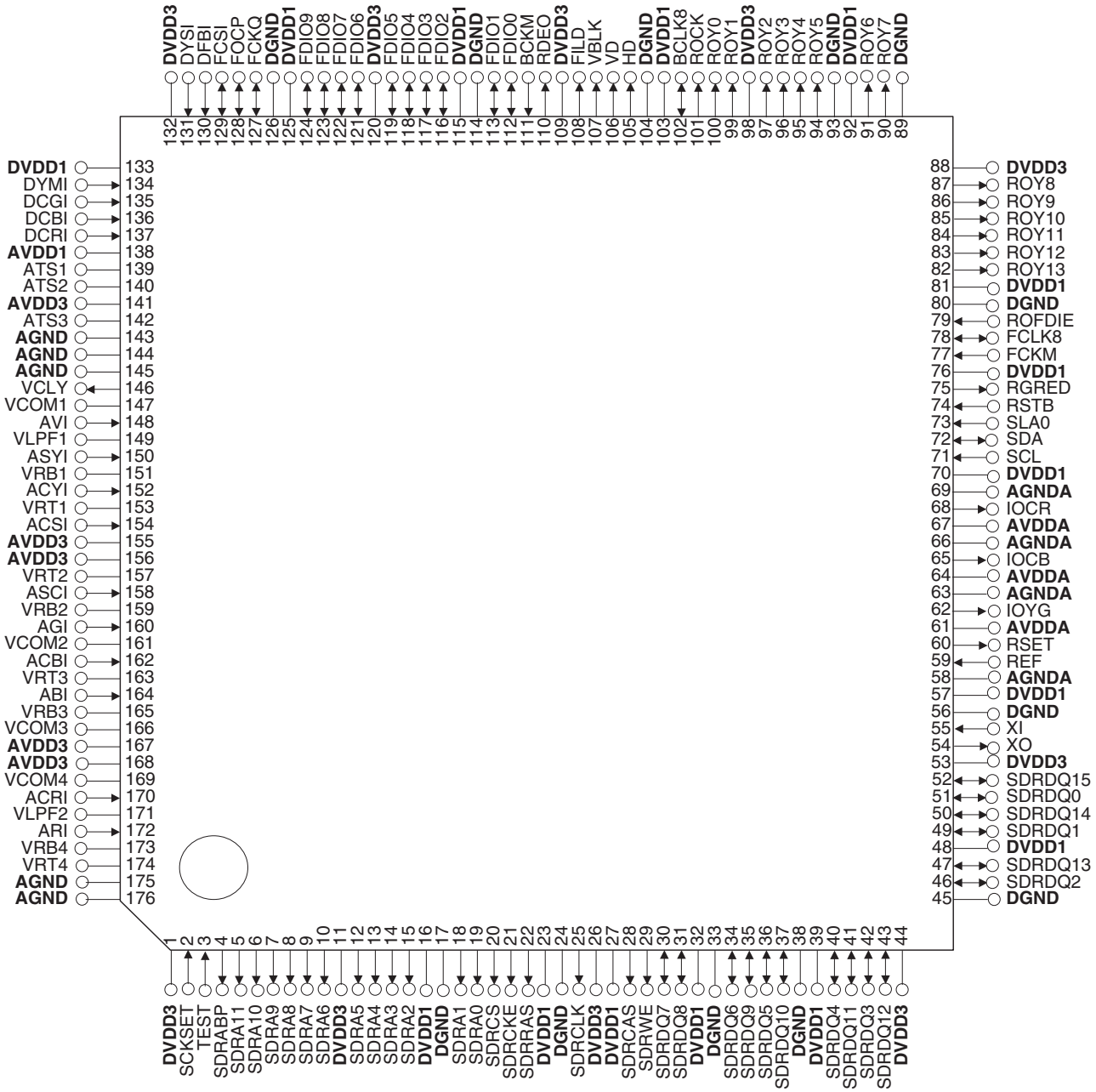
■UPD64015AGM-UEM (MAIN ASSY : IC5101)

• Video decoder (for main screen)

● Block Diagram



● **Pin Arrangement (Top View)**



● **Pin Function**

2.1 Power supply/ground terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
AVDD1	138	–	–	–	Analog 1.5V power supply Connect to the 1.5V power supply. Separate it from the other terminals via a filter.
AVDD3	141	–	–	–	Analog 3.3V power supply Connect to the 3.3V power supply. Separate it from the other terminals via a filter.
	155,156,167,168	–	–	–	Analog 3.3V power supply for ADC. Connect to the 3.3V power supply. Separate it from the other power lines via a filter.
AVDDA	61,64,67	–	–	–	Analog 3.3V power supply for DAC. Connect to the 3.3V power supply. Separate it from the other power lines via a filter.
AGND	143,144,145,175,176	–	–	–	Analog ground
AGNDA	58,63,66,69	–	–	–	Analog ground (for DAC)
DVDD1	16,23,27,32,39,48, 57,70,76,81,92,103, 115,125,133	–	–	–	Digital 1.5V power supply Connect to the 1.5V power supply.
DVDD3	1,11,26,44,53,88,98, 109,120,132	–	–	–	Digital 3.3V power supply Connect to the 3.3V power supply.
DGND	17,24,33,38,45,56, 80,89,93,104,114, 126	–	–	–	Digital ground

2.2 System reset terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
RSTB	74	I	Schmitt	–	System reset input (Active-Low)

● **Pin Function**

2.3 I2C bus interface terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
RGRED	75	O	LVTTL N-ch open drain	6 mA	I^2C register lead flag output (Active-Low)
SCL	71	I	LVTTL	Fail-safe	I^2C bus clock input Connect to the SCL line of the system.
SDA	72	I/O	LVTTL N-ch open drain	Fail-safe 6 mA	I^2C bus data input/output Connect to the SDA line of the system.
SLA0	73	I	LVTTL	–	I^2C bus slave address selection input (L : B8h/B9h, H : BAh/BBh) Connect to GND when set to low level and to DVDD3 (3.3V) when set to high level.

2.4 Terminal for test

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
SCKSET	2	I	LVTTL	–	Test mode selection (L: normal, H: test mode)
TEST	3	I	LVTTL	–	Test setting (L: normal, H: test mode)
FCKM	77	I	LVTTL	–	FCLK8 test mode selection (L: normal, H: test mode)
BCKM	111	I	LVTTL	–	Test mode selection of BCLK8 terminal. (L: normal, H: test mode)
ATS1	139	I	Analog	–	Analog test input Connect to GND normally.
ATS2	140	I	Analog	–	Analog test input Connect to GND normally.
ATS3	142	I	Analog	–	Analog test input Connect to GND normally.
VLPF1	149	O	Analog	–	Analog test output Connect to GND via a 0.1μF capacitor.
VLPF2	171	O	Analog	–	Analog test output Connect to GND via a 0.1μF capacitor.

Caution: Connect these terminals for test to GND unless otherwise instructed.

● **Pin Function**

2.5 Clock generator terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
XI	55	I	Analog	–	Reference clock input Connect 24.576MHz crystal oscillator.
XO	54	O	Analog	–	Reference clock output Connect 24.576MHz crystal oscillator.
BCLK8	102	I/O	LVTTL 3-state	6 mA	Subsequent stage line lock clock monitor input/output It will become Hi-Z when BCK8OUT (SA1Fh, D5)=0. Normally, set to BCK8OUT=0 and leave it open.

2.6 Terminal for μPD64031A and μPD64032 digital connection

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
FCLK8	78	I/O	LVTTL 3-state	6 mA	Front stage burst lock clock input/output It will become Hi-Z when FCK8S[2:0] (SA21h, D6-D4)=000b. Normally, set to FCK8S[2:0]=0 and leave it open.
FCKQ	127	I/O	LVTTL 3-state	3 mA	Sampling clock output for μPD64031A and μPD64032 digital connection. It will become Hi-Z when FCKQS[2:0] (SA21h, D2-D0)=000b. Normally, set to FCKQS[2:0]=0 and leave it open.
FOCP	128	I/O	LVTTL 3-state	3 mA	Clamp pulse output for μPD64031A and μPD64032 digital connection/timing output (VD) for digital RGB input. It will become Hi-Z when FOCPS[2:0] (SA23h, D2-D0)=000b. Normally, set to FOCPS[2:0]=0 and leave it open.

2.7 Terminal for RGB input

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
DFBI	130	I	LVTTL	–	Fast Blanking signal input for analog RGB input.
DYSI	131	I	LVTTL	–	YS signal input for digital RGB input.
DYMI	134	I	LVTTL	–	YM signal input for digital RGB input.
DCGI	135	I	LVTTL	–	Digital RGB/G signal input
DCBI	136	I	LVTTL	–	Digital RGB/B signal input
DCRI	137	I	LVTTL	–	Digital RGB/R signal input
FCSI	129	I/O	LVTTL 3-state	3 mA	Sync separation signal input/timing output (HD) for RGB input. It will become Hi-Z when FCSIS[2:0] (SA22h, D2-D0)=000b. Normally, set to FCSIS[2:0]=0 and leave it open.

● **Pin Function**

2.8 ADC1 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
AVI	148	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ASYI	150	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ACYI	152	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ACSI	154	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
VCLY	146	O	Analog	–	ADC1 clamp electric potential Connect to GND via 0.1μF and 10μF capacitors.
VCOM1	147	I	Analog	–	ADC1 in-phase reference voltage Connect to GND via a 0.1μF capacitor.
VRB1	151	I	Analog	–	ADC1 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VRT1	153	I	Analog	–	ADC1 top reference voltage Connect to GND via a 0.1μF capacitor.

2.9 ADC2 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ASCI	158	I	Analog	–	ADC2 separate C signal input Input the image signal by cutting the capacity.
AGI	160	I	Analog	–	ADC2 RGB component G signal input Input the image signal by cutting the capacity.
VRT2	157	I	Analog	–	ADC2 top reference voltage Connect to GND via a 0.1μF capacitor.
VRB2	159	I	Analog	–	ADC2 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VCOM2	161	I	Analog	–	ADC2 in-phase reference voltage Connect to GND via a 0.1μF capacitor.

● **Pin Function**

2.10 ACD3 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ACBI	162	I	Analog	–	ADC3 color difference component Cb signal input Input the image signal by cutting the capacity.
ABI	164	I	Analog	–	ADC3 RGB component B signal input Input the image signal by cutting the capacity.
VRT3	163	I	Analog	–	ADC3 top reference voltage Connect to GND via a 0.1μF capacitor.
VRB3	165	I	Analog	–	ADC3 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VCOM3	166	I	Analog	–	ADC3 in-phase reference voltage Connect to GND via a 0.1μF capacitor.

2.9 ACD4 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ACRI	170	I	Analog	–	ADC4 color difference component Cr signal input Input the image signal by cutting the capacity.
ARI	172	I	Analog	–	ADC3 RGB component R signal input Input the image signal by cutting the capacity.
VCOM4	169	I	Analog	–	ADC4 in-phase reference voltage Connect to GND via a 0.1μF capacitor.
VRB4	173	I	Analog	–	ADC4 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VRT4	174	I	Analog	–	ADC4 top reference voltage Connect to GND via a 0.1μF capacitor.

2.12 DAC section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
IO-YG	62	O	Analog	–	Color difference component Y/RGB component G output signal. Connect to AGNDA via a 200Ω load resistance.
IO-CR	68	O	Analog	–	Color difference component Cr/RGB component R output signal. Connect to AGNDA via a 200Ω load resistance.
IO-CB	65	O	Analog	–	Color difference component Cb/RGB component B output signal. Connect to AGNDA via a 200Ω load resistance.
REF	59	I	Analog	–	External reference input pin. Supply 1.0V. And, connect to AGNDA via a 0.1μF capacitor.
RSET	60	O	Analog	–	Connect to AGNDA via a 620Ω resistor for external adjustment.

● **Pin Function**

2.13 Digital image input/output terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
FDIO0-FDIO9	112,113,116, 117,118,119, 121,122,123, 124	I/O	LVTTL 3-state	6 mA	Digital 8/10 bit Cb, Cr output/input at the time of μPD64031A digital connection. It will become Hi-Z when FDIOS[2:0] (SA22h, D6-D4)=000b. Leave it open when not in use.
ROCK	101	O	LVTTL 3-state	6 mA	Clock for digital ITU-R BT.656/component output.
ROY0-ROY13	100,99,97,96, 95,94,91,90, 87,86,85,84, 83,82	O	LVTTL 3-state	6 mA	Digital ITU-R BT.656/component output. Digital RGB component (8 bit) output
ROFDIE	79	I	LVTTL	–	Image input/output terminal output enable. The state of ROY[13:0], ROCK, HD, VD, VBLK, FILD and RDEO terminals is controlled. L: Output terminal Hi-Z, H: Output enable Normally, pull up to 3.3V.

2.14 timing output terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
HD	105	O	LVTTL 3-state	3 mA	Horizontal sync signal output
VD	106	O	LVTTL 3-state	3 mA	Vertical sync signal output
VBLK	107	O	LVTTL 3-state	3 mA	V blanking output
FILD	108	O	LVTTL 3-state	3 mA	Field output
RDEO	110	O	LVTTL 3-state	3 mA	Effective pixel range output

● **Pin Function**

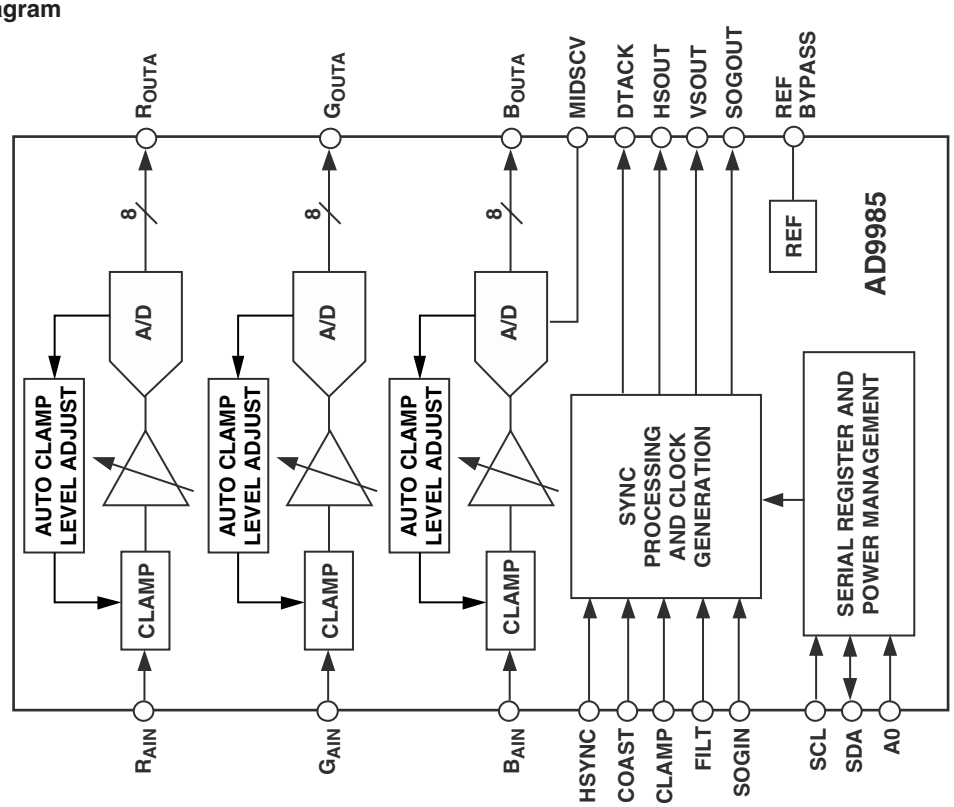
2.15 Memory interface terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
SDRABP	4	O	LVTTL 3-state	3 mA	All bank pre-charge output for external memory (Active-High)
SDRCLK	25	O	LVTTL 3-state	9 mA	Clock output for external memory
SDRCKE	21	O	LVTTL 3-state	3 mA	Clock enable output for external memory (Active-High)
SDRCS	20	O	LVTTL 3-state	3 mA	Chip select output for external memory (Active-Low)
SDRCAS	28	O	LVTTL 3-state	3 mA	Column address strobe output for external memory (Active-Low)
SDRRAS	22	O	LVTTL 3-state	3 mA	Low address strobe output for external memory (Active-Low)
SDRWE	29	O	LVTTL 3-state	3 mA	Write enable output for external memory (Active-Low)
SDRA0 -SDRA11	19,18,15,14, 13,12,10,9,8, 7,6,5	O	LVTTL 3-state	3 mA	Address output for external memory Insert a damping resistor of approximately 100Ω, and connect to the SDRAM address terminal.
SDRDQ0 -SDRDQ15	51,49,46,42, 40,36,34,30, 31,35,37,41, 43,47,50,52	I/O	LVTTL 3-state	6 mA	Data input/output for external memory.

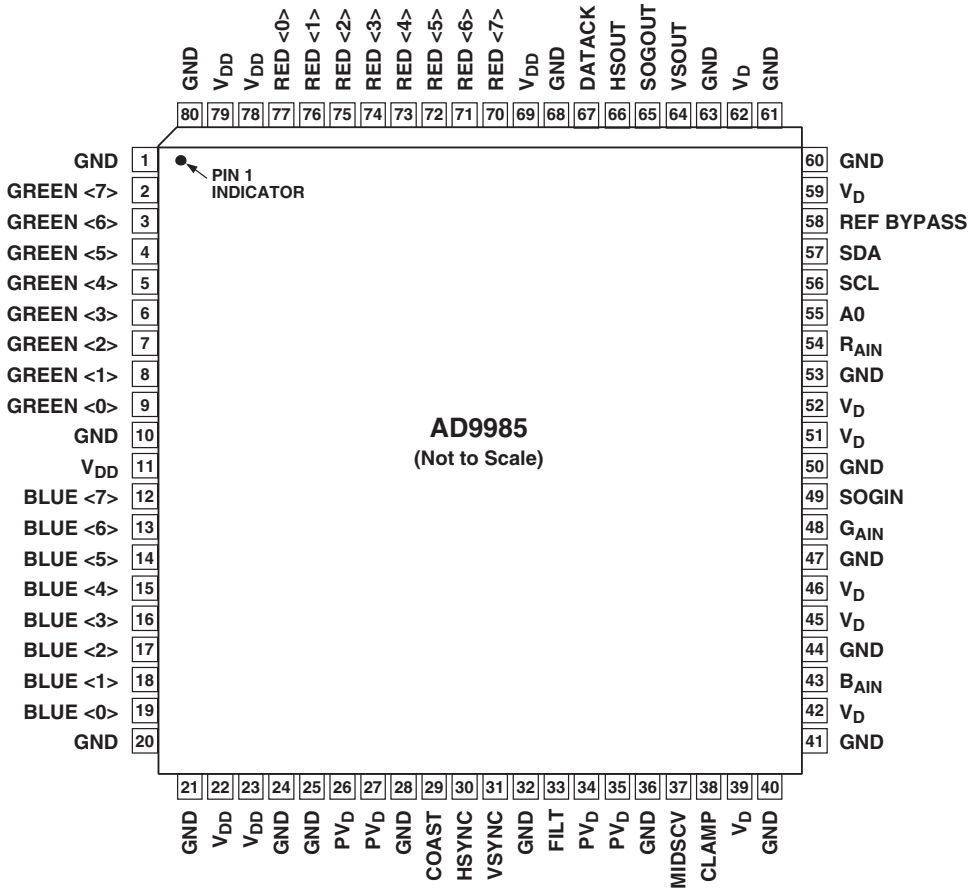
■ AD9985KSTZ-110 (MAIN ASSY : IC5301)

• ADC

● Block Diagram



● Pin Arrangement (Top View)



● Pin Function

Pin Type	Mnemonic	Function	Value	Pin No.
Inputs	R_{AIN}	Analog Input for Converter R	0.0 V to 1.0V	54
	G_{AIN}	Analog Input for Converter G	0.0 V to 1.0V	48
	B_{AIN}	Analog Input for Converter B	0.0 V to 1.0V	43
	HSYNC	Horizontal SYNC Input	3.3 V CMOS	30
	VSYNC	Vertical SYNC Input	3.3 V CMOS	31
	SOGIN	Input for Sync-on-Green	0.0 V to 1.0 V	49
	CLAMP	Clamp Input (External CLAMP Signal)	3.3 V CMOS	38
	COAST	PLL COAST Signal Input	3.3 V CMOS	29
Outputs	Red [7:0]	Outputs of Converter Red, Bit 7 is the MSB	3.3 V CMOS	70–77
	Green [7:0]	Outputs of Converter Green, Bit 7 is the BSB	3.3 V CMOS	2–9
	Blue [7:0]	Outputs of Converter Blue, Bit 7 is the BSB	3.3 V CMOS	12–19
	DATACK	Data Output Clock	3.3 V CMOS	67
	HSOUT	HSYNC Output (Phase-Aligned with DATACK)	3.3 V CMOS	66
	VSOUT	VSYNC Output (Phase-Aligned with DATACK)	3.3 V CMOS	64
	SOGOUT	Sync-on-Green Slicer Output	3.3 V CMOS	65
References	REF BYPASS	Internal Reference Bypass	1.25 V	58
	MIDSCV	Internal Midscale Voltage Bypass		37
	FILT	Connection for External Filter Components for Internal PLL		33
Power Supply	V_D	Analog Power Supply	3.3 V	39, 42, 45, 46, 51, 52, 59, 62
	V_{DD}	Output Power Supply	3.3 V	11, 22, 23, 69, 78, 79
	PV_D	PLL Power Supply	3.3 V	26, 27, 34, 35
	GND	Ground	0 V	1, 10, 20, 21, 24, 25, 28, 32, 36, 40, 41, 44, 47, 50, 53, 60, 61, 63, 68, 80
Control	SDA	Serial Port Data I/O	3.3 V CMOS	57
	SCL	Serial Port Data Clock (100 kHz Maximum)	3.3 V CMOS	56
	A0	Serial Port Address Input 1	3.3 V CMOS	55

● **Pin Function**

Pin Name	Function
OUTPUTS	
HSOUT	Horizontal Sync Output A reconstructed and phase-aligned version of the Hsync input. Both the polarity and duration of this output can be programmed via serial bus registers. By maintaining alignment with DATACK and Data, data timing with respect to horizontal sync can always be determined.
VSOUT	Vertical Sync Output A reconstructed and phase-aligned version of the video Vsync. The polarity of this output can be controlled via a serial bus bit. The placement and duration in all modes is set by the graphics transmitter.
SOGOUT	Sync-On-Green Slicer Output This pin outputs either the signal from the Sync-on-Green slicer comparator or an unprocessed but delayed version of the Hsync input. See the Sync Processing Block Diagram to view how this pin is connected. (Note: Besides slicing off SOG, the output from this pin gets no other additional processing on the AD9985. Vsync separation is performed via the sync separator.)
SERIAL PORT (2-Wire)	
SDA	Serial Port Data I/O
SCL	Serial Port Data Clock
A0	Serial Port Address Input 1 For a full description of the 2-wire serial register and how it works, refer to the 2-wire serial control port section.
DATA OUTPUTS	
RED	Data Output, Red Channel
GREEN	Data Output, Green Channel
BLUE	Data Output, Blue Channel The main data outputs. Bit 7 is the MSB. The delay from pixel sampling time to output is fixed. When the sampling time is changed by adjusting the PHASE register, the output timing is shifted as well. The DATACK and HSOUT outputs are also moved, so the timing relationship among the signals is maintained. For exact timing information.
DATA CLOCK OUTPUT	
DATACK	Data Output Clock The main clock output signal used to strobe the output data and HSOUT into external logic. It is produced by the internal clock generator and is synchronous with the internal pixel sampling clock. When the sampling time is changed by adjusting the PHASE register, the output timing is shifted as well. The Data, DATACK, and HSOUT outputs are all moved, so the timing relationship among the signals is maintained.
INPUTS	
R_{AIN}	Analog Input for Red Channel
G_{AIN}	Analog Input for Green Channel
B_{AIN}	Analog Input for Blue Channel High impedance inputs that accept the Red, Green, and Blue channel graphics signals, respectively. (The three channels are identical, and can be used for any colors, but colors are assigned for convenient reference.) They accommodate input signals ranging from 0.5 V to 1.0 V full scale. Signals should be ac-coupled to these pins to support clamp operation.
HSYNC	Horizontal Sync Input This input receives a logic signal that establishes the horizontal timing reference and provides the frequency reference for pixel clock generation. The logic sense of this pin is controlled by serial Register 0EH Bit 6 (Hsync Polarity). Only the leading edge of Hsync is active; the trailing edge is ignored. When Hsync Polarity = 0, the falling edge of Hsync is used. When Hsync Polarity = 1, the rising edge is active. The input includes a Schmitt trigger for noise immunity, with a nominal input threshold of 1.5 V.
VSYNC	Vertical Sync Input The input for vertical sync.

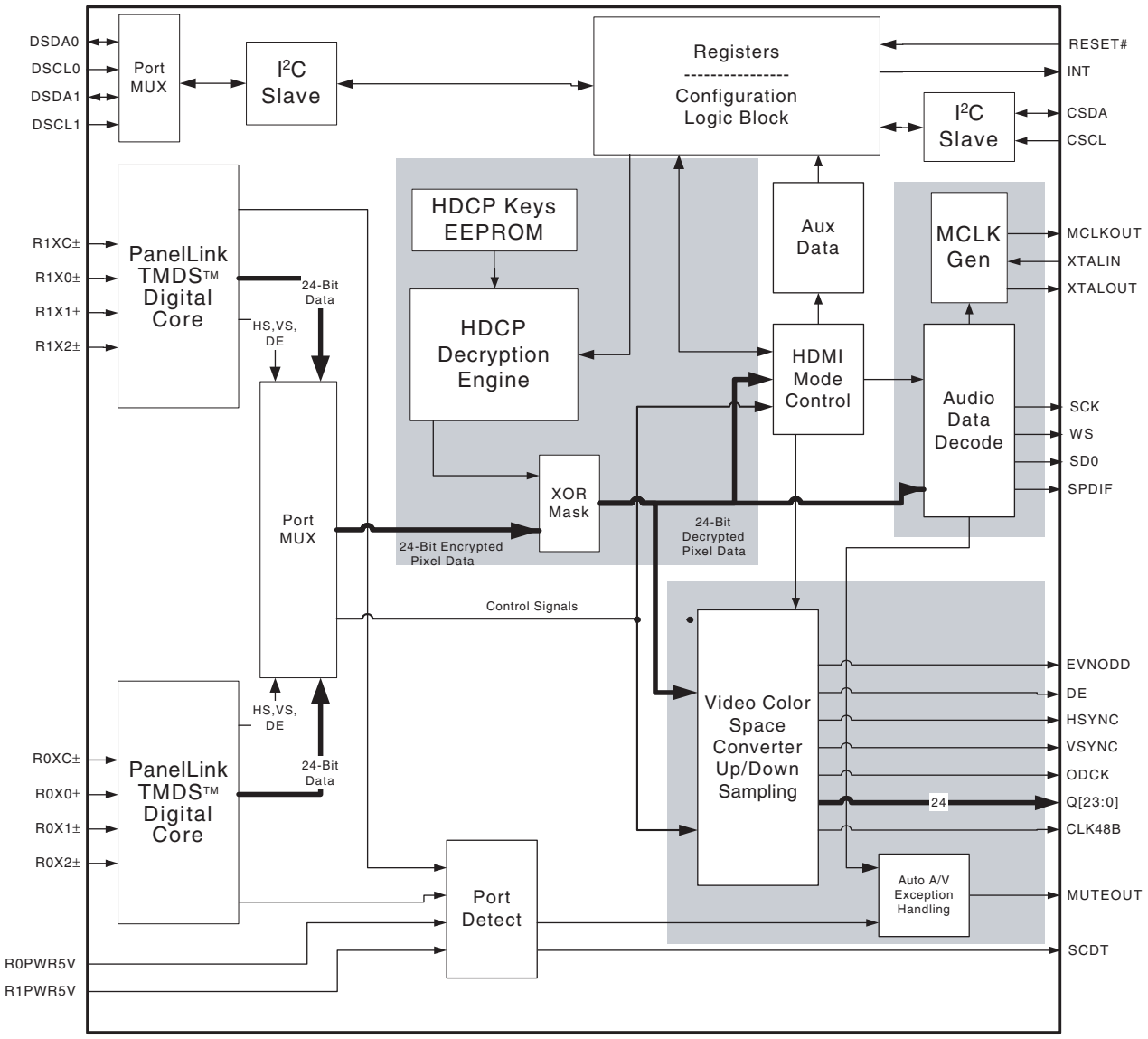
● **Pin Function**

Pin Name	Function
SOGIN	Sync-on-Green Input This input is provided to assist with processing signals with embedded sync, typically on the Green channel. The pin is connected to a high speed comparator with an internally generated threshold. The threshold level can be programmed in 10 mV steps to any voltage between 10 mV and 330 mV above the negative peak of the input signal. The default voltage threshold is 150 mV. When connected to an ac-coupled graphics signal with embedded sync, it will produce a noninverting digital output on SOGOUT. (This is usually a composite sync signal, containing both vertical and horizontal sync information that must be separated before passing the horizontal sync signal to Hsync.) When not used, this input should be left unconnected. For more details on this function and how it should be configured, refer to the Sync-on-Green section.
CLAMP	External Clamp Input This logic input may be used to define the time during which the input signal is clamped to ground. It should be exercised when the reference dc level is known to be present on the analog input channels, typically during the back porch of the graphics signal. The CLAMP pin is enabled by setting control bit Clamp Function to 1 (Register 0FH, Bit 7, default is 0). When disabled, this pin is ignored and the clamp timing is determined internally by counting a delay and duration from the trailing edge of the Hsync input. The logic sense of this pin is controlled by Clamp Polarity Register 0FH, Bit 6. When not used, this pin must be grounded and Clamp Function programmed to 0.
COAST	Clock Generator Coast Input (Optional) This input may be used to cause the pixel clock generator to stop synchronizing with Hsync and continue producing a clock at its current frequency and phase. This is useful when processing signals from sources that fail to produce horizontal sync pulses during the vertical interval. The COAST signal is generally not required for PC-generated signals. The logic sense of this pin is controlled by Coast Polarity (Register 0FH, Bit 3). When not used, this pin may be grounded and Coast Polarity programmed to 1, or tied HIGH (to V_D through a 10 k resistor) and Coast Polarity programmed to 0. Coast Polarity defaults to 1 at power-up.
REF BYPASS	Internal Reference BYPASS Bypass for the internal 1.25 V band gap reference. It should be connected to ground through a 0.1 µF capacitor. The absolute accuracy of this reference is ±4%, and the temperature coefficient is ±50 ppm, which is adequate for most AD9985 applications. If higher accuracy is required, an external reference may be employed instead.
MIDSCV	Midscale Voltage Reference BYPASS Bypass for the internal midscale voltage reference. It should be connected to ground through a 0.1 µF capacitor. The exact voltage varies with the gain setting of the Blue channel.
FILT	External Filter Connection For proper operation, the pixel clock generator PLL requires an external filter. Connect the filter shown in Figure to this pin. For optimal performance, minimize noise and parasitics on this node.
POWER SUPPLY	
V_D	Main Power Supply These pins supply power to the main elements of the circuit. They should be filtered and as quiet as possible.
V_{DD}	Digital Output Power Supply A large number of output pins (up to 25) switching at high speed (up to 110 MHz) generates a lot of power supply transients (noise). These supply pins are identified separately from the V_D pins so special care can be taken to minimize output noise transferred into the sensitive analog circuitry. If the AD9985 is interfacing with lower voltage logic, V_{DD} may be connected to a lower supply voltage (as low as 2.5 V) for compatibility.
PV_D	Clock Generator Power Supply The most sensitive portion of the AD9985 is the clock generation circuitry. These pins provide power to the clock PLL and help the user design for optimal performance. The designer should provide quiet, noise-free power to these pins.
GND	Ground The ground return for all circuitry on-chip. It is recommended that the AD9985 be assembled on a single solid ground plane, with careful attention given to ground current paths.

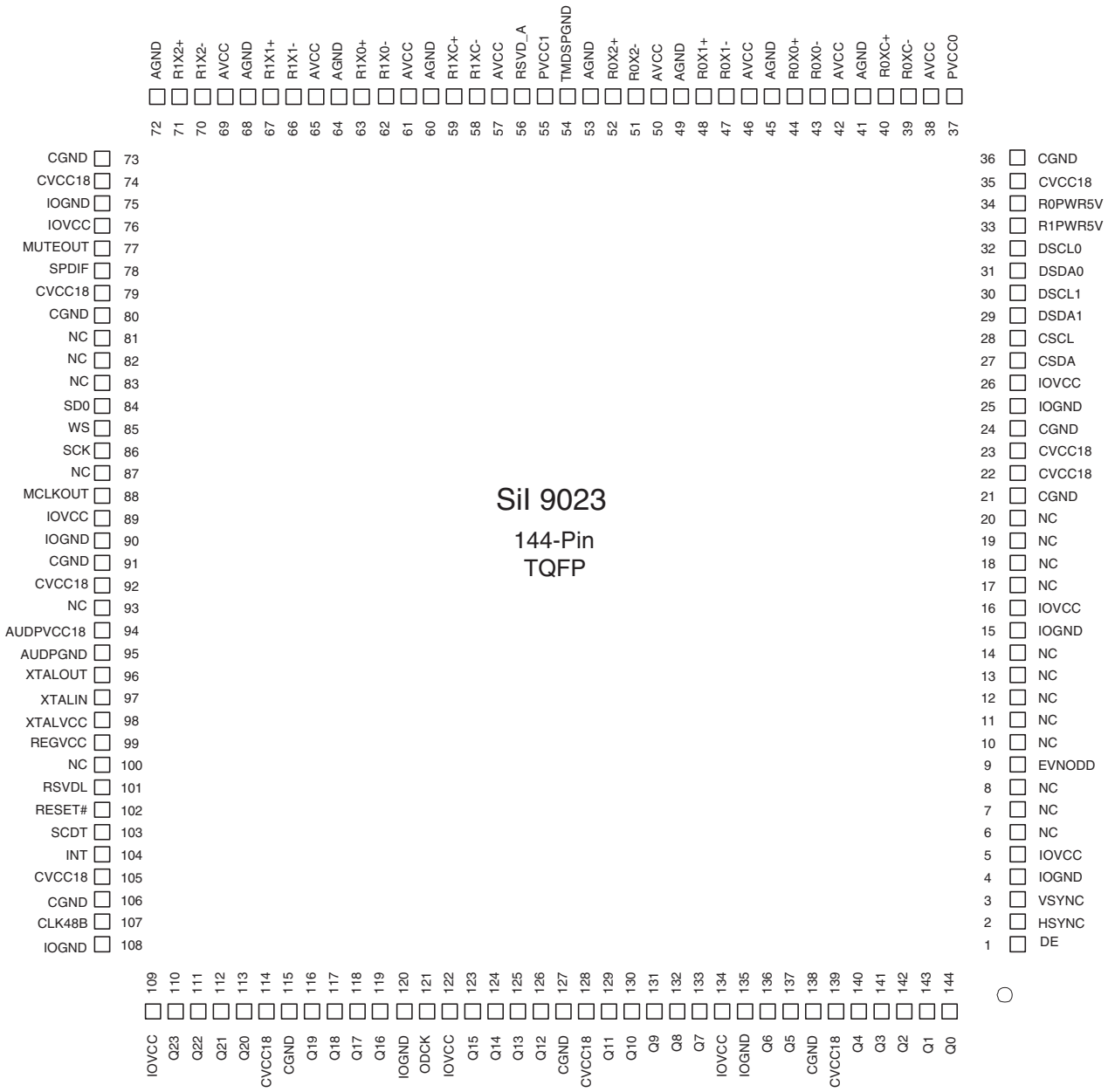
■ Sil9023CTU (MAIN ASSY : IC5401)

• **HDMI Rx**

● Block Diagram



● **Pin Arrangement (Top View)**



● **Pin Function**

Digital Video Output Pins

Pin Name	Pin #	Strength	Type	Dir	Description
Q0	144	8 mA	LVTTL	Output	24-bit Output Pixel Data Bus.
Q1	143		LVTTL	Output	
Q2	142		LVTTL	Output	
Q3	141		LVTTL	Output	
Q4	140		LVTTL	Output	
Q5	137		LVTTL	Output	
Q6	136		LVTTL	Output	
Q7	133		LVTTL	Output	
Q8	132		LVTTL	Output	
Q9	131		LVTTL	Output	
Q10	130		LVTTL	Output	
Q11	129		LVTTL	Output	
Q12	126		LVTTL	Output	
Q13	125		LVTTL	Output	
Q14	124		LVTTL	Output	
Q15	123		LVTTL	Output	
Q16	119		LVTTL	Output	
Q17	118		LVTTL	Output	
Q18	117		LVTTL	Output	
Q19	116		LVTTL	Output	
Q20	113		LVTTL	Output	
Q21	112		LVTTL	Output	
Q22	111		LVTTL	Output	
Q23	110		LVTTL	Output	
DE	1		LVTTL	Output	Data enable.
HSYNC	2		LVTTL	Output	Horizontal Sync Output control signal.
VSYNC	3		LVTTL	Output	Vertical Sync Output control signal.
ODCK	121	12 mA	LVTTL	Output	Output Data Clock.

● Pin Function

Digital Audio Output Pins

Pin Name	Pin #	Strength	Type	Dir	Description
XTALIN	97	—	LVTTL	In	Crystal Clock Input.
XTALOUT	96	—	LVTTL	Out	Crystal Clock Output.
MCLKOUT	88	8 mA	LVTTL	Out	Audio Master Clock Output.
SCK	86	4 mA	LVTTL	Out	I^2S Serial Clock Output.
WS	85	4 mA	LVTTL	Out	I^2S Word Select Output.
SD0	84	4 mA	LVTTL	Out	I^2S Serial Data Output.
SPDIF	78	4 mA	LVTTL	Out	S/PDIF Audio Output.
MUTEOUT	77	4 mA	LVTTL	Out	Mute Audio Output.

Configuration/Programming Pins

Pin Name	Pin #	Strength	Type	Dir	Description
INT	104	4 mA	LVTTL[1]	Out	Interrupt Output
RESET#	102	—	Schmitt	In	Reset Pin. Active LOW. 5V Tolerant.
DSCL0	32	—	Schmitt	In	DDC I^2C Clock for Port 0. 5V Tolerant.
DSDA0	31	4 mA	Schmitt	Bi-Di	DDC I^2C Data for Port 0. 5V Tolerant.
DSCL1	30	—	Schmitt	In	DDC I^2C Clock for Port 1. 5V Tolerant.
DSDA1	29	4 mA	Schmitt	Bi-Di	DDC I^2C Data for Port 1. 5V Tolerant.
CSCL	28	—	Schmitt	In	Configuration I^2C Clock. 5V Tolerant.
CSDA	27	4 mA	Schmitt	Bi-Di	Configuration I^2C Data. 5V Tolerant.
SCDT	103	12 mA	LVTTL	Out	Indicates active video at HDMI input port.
CLK48B	107	12 mA	LVTTL	Bi-Di	Data Bus Latch Enable. [2]
R0PWR5V	34	—	Schmitt	In	Port 0 Transmitter Detect. 5V Tolerant.
R1PWR5V	33	—	Schmitt	In	Port 1 Transmitter Detect. 5V Tolerant.
RSVDL	101	—	LVTTL	In	Reserved, must be tied LOW.
RSVD_A	56	—	—	—	Reserved Pin, leave unconnected.
NC	6,7,8,10,11,12,13,14,17,18,19,20,81,82,83,87,93,100	—	—	—	No internal connection.
EVNODD	9	8 mA	LVTTL	Out	Indicates Even or Odd field for interlaced formats. Polarity programmable in register.

Notes:
1. The INT pin is programmable as either a push-pull LVTTL output, or as an open-drain output.
2. CLK48B is used to clock external 24-to-48 bit latches. CLK48B is also latched on the rising edge of RESET# to set the I2C device addresses for CSCL/CSDA. Refer to Table 10. CLK48B has a weak internal pull-down, and so will be latched as a LOW if not otherwise connected.

● **Pin Function**

Differential Signal Data Pins

Pin Name	Pin #	Type	Description	
R0XC+	40	Analog	TMDS input clock pair.	HDMI Port 0
R0XC-	39	Analog		
R0X0+	44	Analog	TMDS input data pair.	
R0X0-	43	Analog		
R0X1+	48	Analog	TMDS input data pair.	
R0X1-	47	Analog		
R0X2+	52	Analog	TMDS input data pair.	
R0X2-	51	Analog		
R1XC+	59	Analog	TMDS input clock pair.	HDMI Port 1
R1XC-	58	Analog		
R1X0+	63	Analog	TMDS input data pair.	
R1X0-	62	Analog		
R1X1+	67	Analog	TMDS input data pair.	
R1X1-	66	Analog		
R1X2+	71	Analog	TMDS input data pair.	
R1X2-	70	Analog		

Power and Ground Pins

Pin Name	Pin #	Type	Description	Supply
CVCC18	22, 23, 35, 74, 79, 92, 105, 114, 128, 139	Power	Digital Logic VCC	1.8V
CGND	21, 24, 36, 73, 80, 91, 106, 115, 127, 138	Ground	Digital Logic GND	
IOVCC	5, 16, 26, 76, 89, 109, 122, 134	Power	Input/Output Pin VCC	3.3V
IOGND	4, 15, 25, 75, 90, 108, 120, 135	Ground	Input/Output Pin GND	
AVCC	38, 42, 46, 50, 57, 61, 65, 69	Power	TMDS Analog VCC	3.3V
AGND	41, 45, 49, 53, 60, 64, 68, 72	Ground	TMDS Analog GND	
PVCC0	37	Power	TMDS Port 0 PLL VCC	3.3V
PVCC1	55	Power	TMDS Port 1 PLL VCC	3.3V
TMDSPGND	54	Ground	TMDS PLL GND	
AUDPVCC18	94	Power	ACR PLL VCC	1.8V
AUDPGND	95	Ground	ACR PLL GND	
XTALVCC	98	Power	ACR PLL Crystal Input VCC	3.3V
REGVCC	99	Power	ACR PLL Regulator VCC	3.3V